

- What is the brand name of your company's product for anatomic or digital pathology?
- What is the latest version of your named product; what year was this version first released to market?
- What is the intended use or primary function of the product?
- What types of specimen/sample does the product employ?
- What types of diseases, conditions, or analytes does the product detect?
- What level of magnification can be achieved; what level of image resolution is captured?
- Under ideal conditions, what is the time to first result; how are the test results made available?
- What are the product's maximum capacity and throughput under ideal conditions?
- Briefly describe any automation or connectivity features or options.
- What is the typical training time for the product?
- What types of technical support are available?
- What capabilities, features, or accessories distinguish this product from others on the market?

**BioGenex**

Fremont, Calif  
(800) 421-4149  
[www.biogenex.com](http://www.biogenex.com)

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Xmatrx Elite	Xmatrx Mini eFISHiciency workstation	Xmatrx Nano eFISHiciency system for FISH automation
Xmatrx Elite; 2014.	Xmatrx Mini; 2016.	Xmatrx Nano; 2014.
Intended for in vitro diagnostic use. Suitable for immunohistochemistry (IHC), fluorescence in situ hybridization (FISH), in situ hybridization (ISH), multiplexing, in situ PCR, and special stains applications.	Intended for in vitro diagnostic or research use. Suitable for fluorescence in situ hybridization (FISH), in situ hybridization (ISH), and in situ polymerase chain reaction (PCR) applications.	Intended for in vitro diagnostic or research use. Suitable for fluorescence in situ hybridization (FISH), in situ hybridization (ISH), and in situ polymerase chain reaction (PCR) applications.
Any sample on a slide, including biopsy specimens; cultured cell lines; formalin-fixed, paraffin-embedded tissues; and smears.	Any sample on a slide, including biopsy specimens; cultured cell lines; formalin-fixed, paraffin-embedded tissues; and smears.	Any sample on a slide, including biopsy specimens; cultured cell lines; formalin-fixed, paraffin-embedded tissues; and smears.
Autoimmune, birth defects, cancers, chromosomal aberrations, inflammatory, neuronal, and metabolic, among others.	Autoimmune, birth defects, cancers, and chromosomal aberrations, among others.	Autoimmune, birth defects, cancers, and chromosomal aberrations, among others.
Not used for imaging.	Not used for imaging.	Not used for imaging.
IHC run time: 5.5 hours for 40 slides (full slide load); at the end of the run, final coverslip is placed automatically and slides are microscope-ready.	Open system allows total flexibility and user-defined parameters for best staining; slides are microscope-ready with onboard manual coverslapping.	Open system allows total flexibility and user-defined parameters for best staining; slides are microscope-ready with onboard automated coverslapping.
Maximum capacity: 40 slides; throughput: 60 slides in 8 hours.	Maximum capacity: 10 slides; throughput: open system/user-defined parameters.	Maximum capacity: 10 slides; throughput: open system/user-defined parameters.
Fully automated staining with automated onboard coverslapping; slide heating; reagent dispensing; microchamber oil sealing; liquid level sensor; slide and reagent label scanning via radiofrequency identification; laboratory information management system enabled; continuous and stat modes; alerts.	Fully equipped workstation with 10 independent thermocyclers; waste management system for onboard washing; suction pen for manual coverslapping; oil stamp for reaction-chamber sealing; built-in touchscreen display; audiovisual alerts.	Automated stainer with automated onboard coverslapping; slide heating with 10 PCR thermocyclers; microchamber oil sealing; air-blower for excess reagent removal; audio and short message service (SMS) alerts; open system software with optimized factory protocols.
2 days of onsite training.	Self-training with user manual, 1-2 hours.	Self-training with user manual, 1-2 hours.
Customer training; installation; validation assistance; free hotline support; dedicated field engineers for onsite support.	Free hotline support; validation assistance.	Free hotline support; validation assistance.
All-in-one IHC, ISH, special stains, multiplexing, and FISH as optional software; fully automated from baking to final coverslip with proprietary onboard coverslapping; 400-plus optimized factory protocols; reaction microchamber reduces microreagent consumption by up to 90%; 40-slide and 49-reagent capacity; exact temperature control.	High performance in situ PCR, ISH, and FISH workstation with 10 independent thermocyclers; microchamber capability and waste management system; allows complete onboard processing from baking to final coverslip, including washing, oil seal, and coverslip application; includes a touchscreen display with open-system software and audiovisual alerts.	Automation for FISH, ISH, and in situ PCR; decreases FISH hands-on time to <30 min and reduces 33 manual steps to four easy steps; runs up to 10 protocols simultaneously with onboard automated washing, oil sealing, and coverslapping; microchamber technology allows use of as little as 5 µL of probe per slide; includes touch-panel PC and SMS text alerts.

<b>BioGenex</b>	<b>Indica Labs Inc</b>	<b>Indica Labs Inc</b>	<b>MicroDimensions GmbH</b>
Fremont, Calif (800) 421-4149 <a href="http://www.biogenex.com">www.biogenex.com</a>	Corrales, NM (505) 492-0979 <a href="http://indicalab.com">indicalab.com</a>	Corrales, NM (505) 492-0979 <a href="http://indicalab.com">indicalab.com</a>	Munich 0049 89 1894253 30 <a href="http://micro-dimensions.com">micro-dimensions.com</a>
EZ-Retriever pretreatment and antigen retrieval system	Halo	Halo Link	Voloom
EZ-Retriever; 2007.	Halo 2.0; 2016.	Halo Link 1.0; 2017.	2.8.4.; 2012.
Intended for in vitro diagnostic or research use. Suitable for pretreatment in fluorescence <i>in situ</i> hybridization (FISH), immunohistochemistry (IHC), <i>in situ</i> hybridization (ISH), <i>in situ</i> polymerase chain reaction (PCR), and special stains applications.	Facilitates analysis of brightfield and fluorescently stained biomarkers in tissues captured with most digital slide scanners and microscopes.	The browser-based platform facilitates management and sharing, remote annotation, and one-click Halo analysis of digital slides and microscope-based images and associated data.	3D reconstruction from histological sections.
Any sample on a slide, including biopsy specimens; cultured cell lines; formalin-fixed, paraffin-embedded tissues; and smears.	Halo can analyze any specimen type, most commonly biopsies, formalin-fixed, paraffin-embedded tissues,冻s, and smears.	Images captured from any specimen and sample type can be stored, shared, annotated, and analyzed using Halo Link.	Histological tissue sections.
Autoimmune, birth defects, cancers, and chromosomal aberrations, among others.	Used to analyze images collected from any tissues or stain; application-specific modules are available for those performing research in immunooncology, diabetes/metabolism, neuroscience, oncology, toxicology, pathology, and more.	Images captured from any specimen/sample type can be stored, shared, and analyzed using Halo Link.	n/a
Not used for imaging.	Halo analysis can be performed on images at any resolution and magnification.	Halo Link can manage images at any resolution and magnification.	Up to 40x, limited by the scanned resolution.
96 slides in 20 minutes with optimized factory protocols; programmable user-defined parameters allow flexibility.	Analysis speed depends on hardware, application, and image format. Results can be viewed in Halo and Halo Link and can be exported to Excel.	Viewing speed varies based on network. Analysis is performed by Halo analysis engine at equivalent speeds.	Reconstruct 3D volumes in a couple of minutes.
Maximum capacity: 96 slides; throughput: 96 slides in 20 minutes with optimized factory protocols.	No maximum capacity.	No maximum capacity.	Unlimited number of slides.
Built-in probe measures solution temperature in real time and allows time saving and uniform heating; programmable time and temperature controls and microwavable containers included.	Real-time feedback while tuning, automated tissue classification/segmentation using deep learning, compatible with/connections to image management systems from Indica Labs and other vendors.	User access control, onboard quality control tools, barcode reading and parsing, incoming/outgoing connection to external databases including Halo.	Automated reconstruction using patented image registration.
Self-training with user manual, 0.5–1 hour.	2 hours	2 hours	Half a day.
Free hotline support; validation assistance.	Training, IT/network/setup support, and scientific support (tuning of algorithms) included.	Training and IT/networking/setup support included.	E-mail, online, and telephone.
Temperature-controlled microwave oven with built-in probe measures solution temperature in real time and allows time saving and uniform heating; dewax, rehydration, and antigen retrieval in one step with eco-friendly solutions; programmable time and temperature controls allow use of optimized factory protocols or user-defined protocols.	Compatible with most image file formats, real-time analysis tuning, automated tissue classification and segmentation, deep learning technology, image registration, multiplex IHC (5 color) and fluorescence (8 color), individual data on each cell, interactive cell mining, spatial analysis and invasive margin analysis.	Compatible with most image file formats, can be used with most browsers (no installations required), unlimited number of users, user access controls, remote viewing, annotation, and analysis, built-in quality control tools, discussion and task tools, barcode reading and parsing, connection to external databases including Halo.	Reconstructs 3D volumes in a matter of minutes versus days.

<b>MicroDimensions GmbH</b>	<b>OptraScan Inc</b>	<b>Philips</b>	<b>Proscia Inc</b>
Munich 0049 89 1894253 30 <a href="http://micro-dimensions.com">micro-dimensions.com</a>	Sunnyvale, Calif (408) 524-5300 <a href="http://www.optrascan.com">www.optrascan.com</a>	Cambridge, Mass (800) 229-6417 <a href="http://www.usa.philips.com/digitalpathology">www.usa.philips.com/digitalpathology</a>	Baltimore, Md (877) 255-1341 <a href="http://proscia.com">proscia.com</a>
Slidematch	OptraScan 'On-Demand' digital pathology	Philips IntelliSite Pathology Solution	PathologyCloud
1.5.3.; 2012.	OS-15, OS-120 year 2016–2017 (also offer OS-FL for fluorescence, and OS-FS for frozen sections).	Philips IntelliSite Pathology Solution; 2017.	PathologyCloud; 2017.
Alignment of digital whole-slide images for multistain analysis.	Digitization, secondary interpretation, and storage of pathology specimens; for research use only.	Can be used for in vitro diagnostic purposes; can aid pathologists to review and interpret digital images of surgical pathology slides prepared from formalin-fixed, paraffin embedded (FFPE) tissue.	Data and case management, research and second opinion collaboration and telepathology, education, image analysis and immunohistochemistry (IHC) quantification.
Histological tissue sections.	Biopsy specimens prepared as coverslipped formalin-fixed, paraffin-embedded tissues, smears, tissue microarrays.	Surgical pathology slides prepared from FFPE tissue.	Whole-slide images of biopsy specimens.
n/a	Any slides prepared with the above protocol with reasonable stain contrast and tissue surface area; not disease specific.	Reviews and interprets digital images of surgical pathology slides.	Cancer, tissue biopsy images (whole-slide images, tissue microarrays, and others).
Up to 40x, limited by the scanned resolution.	20x (0.5 µm), 40x equivalent (0.25 µm).	40x magnification equivalent at 0.25 µm/pixel.	20x and 40x magnification on whole-slide images.
Aligned series of digital whole-slide images; alignment speed depends on resolution.	From scan load to availability of images under 4 minutes; images are available on a local storage or cloud, which can be viewed on image management software or local viewing application.	Digital images are available in 60 seconds at 40x for a typical 15 x 15 mm scan area.	Instantaneous telepathology tools, 15–30 seconds for image analysis and IHC quantification results.
Up to 25 slides in one batch.	15 slides for OS-15 and 120 slides for OS-120, although it is dynamic loading.	300 slides (15 racks each hold 20 slides).	Unlimited and instantaneous slide and case management.
Batch processing of multiple alignments in one go.	After initial calibration during installation and with no workflow changes (including slide type), the unit is capable of autocalibration, auto region detection on specimen; some errors can be autocorrected with recalibration.	Continuous autofocus; scanner autocalibrates itself and technical support can also be provided remotely depending on the technical support required.	Integration with scanners for direct-to-Proscia case import, integration with billing providers, autocalibration of image analysis and IHC and hematoxylin and eosin stain quantification to adjust for stain variability.
1 hour.	Half day to 1 day, depending on number of participants.	Designed for user-friendliness and is fully automated, therefore the training time required is limited.	1 week.
E-mail, online, and telephone.	24/7 remote support; onsite when necessary.	Global service and support team available for technical support; technical support can be provided remotely depending on the support required.	Free 24-hour e-mail, online, and phone support; in-person service and support available.
High precision alignment using patented image registration technology; aligns brightfield and fluorescence images.	Subscription pricing offers a flexible purchase model, if capital purchase is not preferred; all software and hardware are cloud-enabled; storage is included.	Cleared for primary diagnostic use; high throughput system for volume/networked clinical labs; enhanced image quality at high-speed scanning; one-step load and walk-away operation; image management system for tailored scalability, versatile integration, and multisite harmonization; features real-time collaboration, smart workflow management, and enhanced viewing.	Proscia's cloud and on-premise solutions address data accessibility, telepathology, and image analysis needs on one unified platform; autocalibration of algorithms adjusts for stain variability; customized setups; new features added monthly; integration with industry partners.

<b>Sunquest Information Systems Inc</b>	<b>Sunquest Information Systems Inc</b>	<b>Technidata</b>	<b>Xifin</b>
Tucson, Ariz (520) 570-2000 <a href="http://www.sunquestinfo.com">www.sunquestinfo.com</a>	Tucson, Ariz (520) 570-2000 <a href="http://sunquestinfo.com">sunquestinfo.com</a>	Montbonnot, France (770) 888-4027 <a href="http://www.technidata-web.com">www.technidata-web.com</a>	San Diego (858) 793-5700 <a href="http://www.xifin.com">www.xifin.com</a>
Sunquest PowerPath	Sunquest CoPathPlus	TD HistoCyto software	Xifin ProNet
Version 10.2, 2016.	Version 6.3, 2017.	TD HistoCyto V13.21; 2017.	Xifin ProNet v1.0, 2006.
Provides an information system backbone for anatomic pathology laboratories to manage all aspects of their specimen workflow, diagnostic reporting, and operations with a strong focus on efficiency and patient safety.	Provides an information system backbone for anatomic pathology laboratories to manage all aspects of their specimen workflow, diagnostic reporting, and operations with a strong focus on efficiency and patient safety.	Pathology laboratory information system.	Enables consolidated storage, sharing, and usage of clinical and financial data and diagnostic images with a web-based enterprise class data repository and integrated workflows.
Primary samples include autopsy, cytology, formalin-fixed, paraffin-embedded tissue, smears, surgical biopsies, and other tissue-based samples.	Primary samples include autopsy, cytology, formalin-fixed, paraffin-embedded tissue, smears, surgical biopsies, and other tissue-based samples.	All specimen kinds used by pathology laboratories including tissues and liquid.	All pathology specimen/sample types images and data can be managed or viewed in Xifin ProNet.
n/a	n/a	n/a	Primary focus is cancer diagnostics and genetic disorders; can be used to manage data from any in vitro diagnostics or research case.
n/a	n/a	n/a	Xifin ProNet is scanning device independent and can store and display all high-resolution image formats; 20x–40x images are common; however, higher resolution images are routinely used.
n/a	n/a	n/a	Scanning speed is dependent on the scanning device capabilities (1–3 minutes). After the image is scanned, the image is processed and saved to ProNet (30 seconds–3 minutes).
n/a	n/a	n/a	There is no practical limit on storage of digital images on the platform.
Connects to a wide variety of systems, instruments, and peripherals, including electronic medical record systems, digital pathology systems, label and cassette printers, slide stainers, and more; built-in rules automate ordering and workflows.	Connects to a wide variety of systems, instruments, and peripherals, including electronic medical record systems, digital pathology systems, label and cassette printers, slide stainers, and more; built-in rules automate ordering and workflows.	Bidirectional interfaces for immunohistochemistry instruments and block and slide printer interfaces; health information system (HIS) interface; lab automation, including barcode printing for cassettes/slides, digital dictation, and specific mechanisms for gynecological cytology.	Image uploading can be automated into Xifin ProNet. Xifin laboratory information system is fully integrated into the Xifin ProNet collaboration and consultation platform.
Varies by user role, includes onsite and online training.	Varies by user role, includes onsite and online training.	Dependent on the laboratory organization.	1–2 hours.
24x7 customer support, self-help portal, and user groups.	24x7 customer support, self-help portal, and user groups.	Onsite installation, deployment, and migration services; hotline; user training.	8 am–8 pm CST standard support; 24/7 emergency support.
Integrated reporting (anatomic pathology, clinical, genetic, and molecular); automatic case allocation; configurable rules engine; synoptic reporting; specimen tracking; digital pathology integration; image diagrams; discrete immunohistochemistry reporting; voice recognition support; integration with the Sunquest Vue workstation for pathologists.	Integrated reporting (anatomic pathology, clinical, genetic, and molecular); synoptic reporting; specimen tracking and routing; digital pathology integration; extensive management reporting; voice recognition support; configurable user interfaces and integration with the Sunquest Vue workstation for pathologists.	Multilaboratory management; legacy data import tool; rapid process tracking; comprehensive traceability; Microsoft Word for reporting; clinical review; instrument connections and HIS interfaces; gynecological cytology; customized forms; image management; digital pathology; document and nonconformity management; contributes to lab accreditation.	Web-based system compliant with the Health Insurance Portability and Accountability Act of 1996; accommodates DICOM and non-DICOM diagnostic images as well as clinical and financial data across multiple disparate systems; eliminates network silos and enables collaboration across such disciplines as oncology, pathology, and radiology.