



## Imaging Instruments

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# Imaging Systems

Imaging systems detect images and quantitate colorimetric, chemiluminescent, fluorescent, and radioisotopic signals. Bio-Rad also offers software (pages 242–245) that provides automation for image acquisition with data analysis and validation. Refer to the guide below to select the imaging system best suited for your applications.

**For More Information**

Request or download bulletin: 5888

**Imaging System Selection Guide**



Application	ChemiDoc™ MP	Gel Doc™ EZ	GS-800™ Densitometer	Gel Doc XR+	ChemiDoc XRS+	PharosFX™ PharosFX™	PharosFX Plus	Personal Molecular Imager™
<b>Nucleic Acid Detection</b>								
Ethidium bromide stain	5	4	—	4	4	5	5	—
SYBR® Green I stain	5	4	—	4	4	5	5	—
SYBR® Safe stain	5	4	—	4	4	5	5	—
Fast Blast™ DNA stain	4	4	5	4	4	—	—	—
<b>Protein Detection, 1-D Gels</b>								
Stain-free gels	5	5	—	—	—	—	—	—
Coomassie Blue stain	4	4	5	4	4	2	2	—
Silver stain	4	4	5	4	4	2	2	—
SYPRO Ruby protein gel stain	4	4	—	4	4	5	5	—
Flamingo™ fluorescent gel stain	4	3	—	4	4	5	5	—
Oriole™ fluorescent gel stain	5	4	—	5	5	—	—	—
<b>Protein Detection, 2-D Gels</b>								
Coomassie Blue stain	4	3	5	3	3	2	2	—
Silver stain	4	3	5	3	3	2	2	—
SYPRO Ruby protein gel stain	4	3	—	3	3	5	5	—
Flamingo fluorescent gel stain	4	2	—	3	3	5	5	—
Oriole fluorescent gel stain	5	3	—	3	3	—	—	—
Pro-Q stain	4	2	—	2	3	5	5	—
Cy2, Cy3, Cy5 label	4	—	—	—	—	5	5	—
<b>Blot Detection</b>								
Stain-free blots	5	5	—	—	—	—	—	—
Coomassie Blue stain	4	—	5	4	4	2	2	—
Silver stain	5	—	5	4	4	2	2	—
SYPRO Ruby protein blot stain*	5	—	—	—	—	5	5	—
Immun-Star™ chemiluminescence	5	—	—	—	4	—	—	—
Chemifluorescence*	5	—	—	1	1	4	4	—
Quantum dot*	5	2	—	2	2	5	5	—
Multiplex fluorescence	5	—	—	—	—	5	5	—
<b>Micro- and Macroarray** Detection</b>								
Radiolabel	—	—	—	—	—	—	5	5
Fluorescence	5	—	—	2	2	5	5	—
Immun-Star chemiluminescence	5	—	—	—	4	—	—	—
<b>Colony Counting</b>								
Colorimetric detection	5	—	—	4	4	3	3	—
Fluorescence detection	5	—	—	4	4	5	5	—
<b>Isotopic Detection</b>								
Radiolabel	—	—	—	—	—	—	5	5
X-ray film	4	4	5	4	4	3	3	—

— Not recommended; 1–5, recommendation level (5 = highest).

\* Optimal with low fluorescence PVDF membrane.

\*\* With spot diameters ≥400 µm.

**New ChemiDoc™ MP Imaging System**

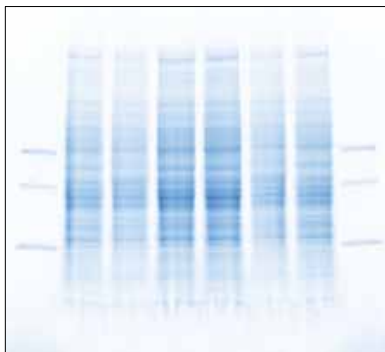
Order Info: Pg 238

The ChemiDoc MP imaging system enables stain-free operation and lets you visualize proteins at every stage of your experiment. Its flexibility and sensitivity are complemented by simple, intuitive operation that integrates seamlessly into your workflow.

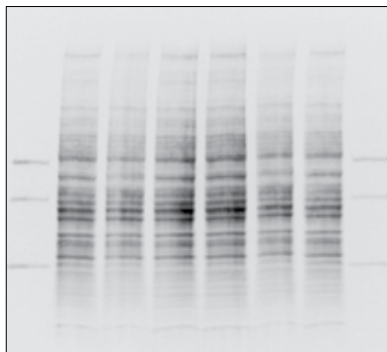
- **Stain-free technology** — eliminates extra steps and allows you to check electrophoresis results and transfer performance before western blotting, conserving precious samples and reducing waste
- **Ease of use** — auto focus, auto exposure, and simple operation mean that with little or no training, you can acquire publication-quality images in seconds
- **Versatility** — can be used for a variety of sample types or experiments that require differing detection methods, including chemiluminescence, multiplex fluorescence, and routine gel imaging as well as for colorimetric gel and blot documentation
- **Image quality** — resolution remains high at any zoom level, without creating artifacts; exceptional dynamic range enables visualization of even the faintest protein bands
- **Sensitivity** — advanced detection technology creates optimal exposure even for small or faint bands

**For More Information**Web: [www.bio-rad.com/chemidocmp](http://www.bio-rad.com/chemidocmp)

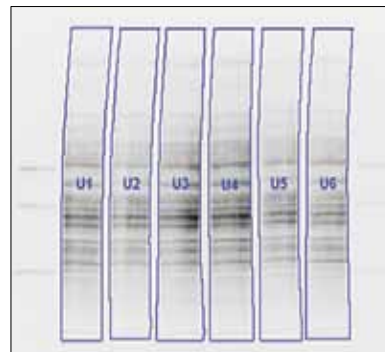
Request or download bulletin: 6133

**Stain-free gel****Visualize**

Visualize protein separation after electrophoresis, before proceeding to blot transfer. The ChemiDoc MP system will activate and provide immediate visualization of protein separation in all lanes with stain-free gels.

**Stain-free blot****Verify**

Verify protein transfer, before proceeding to blot detection. The ChemiDoc MP system paired with stain-free technology enables instant verification of protein transfer.

**Total protein quantification****Validate**

Validate quantitative blot results. Use total protein stain from the stain-free blot to normalize for proteins of interest. **Blue channel**, stain-free blot; **red channel**, trypsin inhibitor probed with DyLight 649.

**Gel Doc™ EZ Imaging System**

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The Gel Doc EZ imaging system is a compact and automated system for obtaining publication-quality images and analyzed results with just the push of a button.

**Smart Imaging**

- **Modular design** — use specific trays for specific applications; clearly defined and color-coded trays eliminate any confusion in usage
- **Flexible options** — purchase only what you want and upgrade when your needs change
- **Simplicity** — create your default protocol once and simply log in to use the tray
- **Image Lab™ software version 3.0** — automate image capture, analysis, user preferences, and myriad other features
- **Completely analyzed results** — obtain high-quality images and analyzed results, including relative MW, quantitation of bands, Excel reports, and PDFs
- **Reproducibility** — user-introduced errors are minimized; rely on the system to give consistent results time after time
- **Condensed protocol** — convert a 2 hr Coomassie staining protocol into a 5 min stain-and-image step with stain-free technology
- **Compatibility** — stain-free gels are western blot compatible, allowing you to check electrophoresis results and quality prior to western blotting
- **Publication-quality images** — obtain clean and smooth images that are visually appealing and publication ready
- **Increased image resolution** — get images with decreased pixelation when images are cropped or zoomed
- **Greater functionality** — no need to export images to another image editing program to change the dpi before importing for publication; define your desired dpi with Image Lab software

**For More Information**Web: [www.bio-rad.com/geldocez](http://www.bio-rad.com/geldocez)

Request or download bulletins: 5782, 5810, 5976, and 6088

**White Tray**

For use with protein applications that use Coomassie Blue, copper, silver, and zinc stains.

**Blue Tray**

For use with all nucleic acid applications that use GelGreen, SYBR® Green, SYBR® Safe, and SYBR® Gold stains.

**UV Tray**

For use with ethidium bromide, SYBR®, Oriole™ fluorescent gel stain, GelRed, SYPRO Ruby, Coomassie Fluor Orange, and Krypton stains.

**Stain-Free Tray**

For use with stain-free gels, such as Mini-PROTEAN® TGX Stain-Free™ gels and Criterion™ TGX Stain-Free™ gels, and stain-free blots.

**Gel Doc™ XR+ and ChemiDoc™ XRS+ Systems**

Order Info: Pg 238

**See Also**

Gel stains:  
pages 179–181.  
Gel analysis software:  
pages 243–245.  
Agarose gel systems:  
page 217.  
Blotting:  
pages 183–201.

The Gel Doc XR+ and ChemiDoc XRS+ systems are based on CCD high-resolution, high-sensitivity detection technology and support multiple detection methods. Key benefits include:

- Quick and accurate gel and blot imaging and analysis
- Automated quantitative analysis of protein and DNA samples in seconds; no training is required
- Wide range of applications with special accessories to preserve sample integrity for downstream research while ensuring user safety
- Publication-quality results

**Gel Doc XR+ System**

The Gel Doc XR+ system consists of a darkroom hood, CCD camera and software-controlled motorized lens, UV and white light illuminators, filter slider with standard filter, and UV-protection shield. The system enables you to:

- Increase cloning efficiency and protein production by protecting DNA electrophoresis samples from UV exposure using the XcitaBlue™ conversion screen and blue light excitable stains such as GelGreen, SYBR® Safe, and SYBR® Green I
- Maintain standard operating procedures or criteria for sample performance as there is no loss in sensitivity compared to UV and ethidium bromide staining

The Gel Doc XR+ system can be upgraded to the ChemiDoc XRS+ system.

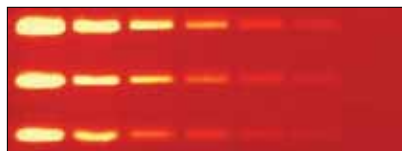
**ChemiDoc XRS+ System**

The ChemiDoc XRS+ system offers sensitive chemiluminescence detection in addition to gel and blot documentation of fluorescent and colorimetric samples. The system includes a supersensitive 16-bit CCD camera that is supercooled for detection of faint samples. The system eliminates the need to use costly and unreliable X-ray film technologies while providing quantitative and reproducible data in seconds. It features a signal accumulation mode (SAM), which guides a user through determining optimum exposure time and capturing a desired image of a chemiluminescent sample.

**For More Information**

Web: [www.bio-rad.com/imaging](http://www.bio-rad.com/imaging)

Request or download bulletins: 5837 and 5838



**An alternative to UV illumination to better preserve DNA samples.**  
**Top**, serial dilutions of precision molecular mass ruler (Bio-Rad) stained with ethidium bromide (EtBr) on agarose gel imaged with UV light;  
**bottom**, serial dilutions of precision molecular mass ruler stained with SYBR® Safe on agarose gel imaged with XcitaBlue conversion screen. Lane 1 of 51.2 bp has an initial load of 51.2 ng, and the Gel Doc XR+ system detects down to 100 pg. There is no loss in sensitivity when a combination of SYBR® Safe nucleic acid fluorescent stain and less harmful blue excitation is used instead of UV-excitable EtBr. The SYBR® Safe image was taken using the XcitaBlue conversion screen and SYBR® Safe/GFP emission filter.

**See Also**

Gel stains:  
pages 179–181.

Gel analysis software:  
pages 243–245.

**PharosFX™ and Personal Molecular Imager™ (PMI™) Systems\***

Order Info: Pg 238

**PharosFX Systems**

The PharosFX Plus system combines the sophisticated fluorescence imaging capabilities of the PharosFX system with the ability to image radiolabeled samples using storage phosphor screens, all in a convenient, ergonomically designed unit. For capabilities of specific systems, refer to the guide below.

**PMI System**

The PMI system is designed specifically for detection of radiolabeled samples using storage phosphor screens. The PMI system has all the storage phosphor detection capabilities and functionality of the top-of-the-line PharosFX Plus system.

**Fluorescence Detection**

PharosFX systems are specially designed for imaging complex fluorescence applications with the highest data accuracy.

- **Optimal detection** — image single and multicolor fluorescence via direct laser excitation with high sensitivity, high resolution, and precise spectral assignment
- **Wide range of fluorophores** — excitation laser lines (532 nm laser and optional external 488 and 635 nm lasers) and detection filters are optimized to detect almost any fluorescent stain or label
- **Flexible sample options** — image blots, microtiter plates, and gels of thicknesses up to 12 mm
- **Automation** — select your application and Quantity One™ software automatically selects the optimal hardware (laser and filter) settings
- **Customization** — novel applications can be configured with custom filters and special detection options
- **Proteomics optimized** — seamless integration with PDQuest™ 2-D analysis software and the EXQuest™ spot cutter ensures reliable sample preparation for mass spectrometry protein identification
- **Multiple workflows** — robust design, ease of use, and low maintenance accommodate labs with multiple users and versatile workflows



Laser Scanner

Optional External Lasers

**Storage Phosphor Imaging for Radioisotope Detection**

PharosFX Plus and PMI systems apply storage phosphor technology that offers ultimate sensitivity, with exposure times typically 1/10 that of film, and quantitative accuracy that is far superior. The PharosFX Plus and PMI systems are compatible with Kodak storage phosphor screens that can be used with Bio-Rad exposure cassettes or with standard autoradiography cassettes. Screens from other suppliers can also be used.

Compatible Kodak phosphor screens include:

- **Imaging screen-K** — general-purpose screen designed for all common radioisotopic emitters, such as <sup>32</sup>P, <sup>33</sup>P, <sup>35</sup>S, and <sup>14</sup>C. Available in 35 x 43 cm and 20 x 25 cm formats, this screen is guaranteed for 1 year
- **Imaging screen-K/tritium** — specialty screen available for imaging <sup>3</sup>H. This screen requires special care and handling and is reusable if cared for properly. The screen is 20 x 24 cm and is guaranteed for 6 months

**For More Information**

Web: [www.bio-rad.com/pharos](http://www.bio-rad.com/pharos)

Request or download bulletins: PMI system — 5475;

PharosFX system — 5331 and 5476

**Configuration Guide**

Features	PharosFX System	PharosFX Plus System	PMI System
<b>Fluorescence detection</b>			
Blue-excited (488 nm external laser)	◦	◦	—
Green-excited (532 nm internal laser)	•	•	—
Red-excited (635 nm external laser)	◦	◦	—
Multiplex applications	•	•	—
<b>Radioisotope detection</b>			
Kodak/Fuji phosphor screens (using internal laser)	—	• (532 nm)	• (635 nm)
Choice of emission filters (including custom filters)	•	•	—

• Standard. ◦ Optional. — Not available.

\* Class I laser products.

**GS-800™ USB Calibrated Densitometer**

Order Info: Pg 239

The GS-800 USB calibrated densitometer offers superior accuracy, sensitivity, and data reproducibility. It automatically self-calibrates the optical density to optimize detection. Features include:

- Imaging of a wide variety of samples such as 1-D and 2-D gels, colorimetric dot and slot blots, film-based chemiluminescent blots, autoradiograms, slides, and photographs
- Transmissive and reflective imaging using red, green, and blue CCD technology to scan chromogenic samples at the optimal detection wavelength
- IQ/OQ for verification of the reflectance and transmittance calibration functions using NIST-traceable calibration targets
- High resolution and analysis of closest bands on a gel due to 12-bit precision and 36.3  $\mu\text{m}$  resolution
- Scanning of larger gels for enhanced separation of proteins on oversized 29 x 40 cm sample platen
- Accurate quantitation of samples, such as Coomassie Blue and silver-stained gels, over a large dynamic range (0–3.0 OD)



- Sealed imaging platen to accommodate wet samples of variable thickness
- Purity analysis and lane background tools for manufacturing QC
- U.S. FDA 21 CFR Part 11 regulation compliance software

**For More Information**Web: [www.bio-rad.com/gs800](http://www.bio-rad.com/gs800)

Request or download bulletins: 2596 and 5474

**See Also**Gel stains:  
pages 179–181.Gel analysis software:  
pages 243–245.**EXQuest™ Spot Cutter**

Order Info: Pg 239

The EXQuest spot cutter is designed to cut spots or bands from gels and blots with high efficiency, then deliver them to 96- and 384-well microplates or 96-tube racks. This fully integrated system is controlled through PDQuest™ 2-D analysis software or Quantity One® 1-D analysis software. It includes an enclosure, an imaging system, a fluidics system, robotics, sensors, a cutting head, a gel tray, a microplate rack, and a wash station. The spot cutter is also available with a PC.

**Hands-Free Spot Cutting (Multiple Gels) and Plate Processing**

- Capability to image gels and blots that are visibly stained (for example, with silver or Coomassie Blue stain) or fluorescence stained (SYPRO Ruby or Flamingo™ fluorescent gel stains)
- Resolution of 100  $\mu\text{m}$  for unbeatable precision
- Ability to image and cut up to 4 gels at a time at up to 600 spots/hour
- High-throughput delivery with >99.5% accuracy to 96- and 384-well microplates or 96-tube racks

**Software Features**

- PDQuest software automatically selects spots in order from lowest to highest amount of protein, minimizing the chance of carryover contamination from spot to spot
- Quantity One software provides convenient tools for 1-D gel cutting
- Tracking of spot information is controlled from image analysis to protein annotation; analyses can be compiled to direct automated spot excision

**For More Information**Web: [www.bio-rad.com/exquest](http://www.bio-rad.com/exquest)

Request or download bulletin: 3194

**See Also**Gel stains:  
pages 179–181.Gel analysis software:  
pages 243–245.



## Imaging Instruments

Catalog #	Description	
<b>ChemiDoc MP System</b>		<b>Pg 233</b>
170-8280	<b>ChemiDoc MP Imaging System with Image Lab Software</b> , PC or Mac, includes darkroom, UV transilluminator, epi-white illumination, camera, power supply, cables, Image Lab software	
170-8283	<b>ChemiDoc MP Red LED Module Kit</b> , for use with applications requiring red fluorophore detection, includes 2 epi-red LED modules, 1 red emission filter	
170-8284	<b>ChemiDoc MP Green LED Module Kit</b> , for use with applications requiring green fluorophore detection, includes 2 epi-green LED modules, 1 green emission filter	
170-8285	<b>ChemiDoc MP Blue LED Module Kit</b> , for use with applications requiring blue fluorophore detection, includes 2 epi-blue LED modules, 1 blue emission filter	
<b>Gel Doc EZ Imaging System</b>		<b>Pg 234</b>
170-8270	<b>Gel Doc EZ Imaging System</b> , PC or Mac, includes darkroom, camera, cables, Image Lab software; sample trays (170-8271, 170-8272, 170-8273, or 170-8274) are sold separately; sample trays are required to use the system	
170-8277	<b>Gel Doc EZ, IQ/OQ</b> , Image Lab software	
<b>Gel Doc EZ Sample Trays</b>		
170-8271	<b>UV Sample Tray</b> , for gels using ultraviolet illumination	
170-8272	<b>White Sample Tray</b> , for gels stained with Coomassie Blue, copper, silver, or zinc stains	
170-8273	<b>Blue Sample Tray</b> , for gels stained with GelGreen or any SYBR stain	
170-8274	<b>Stain-Free Sample Tray</b> , for stain-free gels and blots	
170-8276	<b>Sample Tray Holder</b> , holds 4 sample trays	
<b>Accessories</b>		
170-7581	<b>Mitsubishi Thermal Printer Paper</b> , 4 rolls, for use with Mitsubishi thermal printer	
170-8089	<b>Mitsubishi Thermal Printer</b> , optional	
170-8097	<b>Standard 302 nm UV Lamps</b> , 6	
<b>Gel Doc XR+ and ChemiDoc XRS+ Systems</b>		<b>Pg 235</b>
170-8195	<b>Gel Doc XR+ System with Image Lab Software</b> , PC or Mac, includes darkroom, UV transilluminator, epi-white illumination, camera, cables, Image Lab software	
170-8193	<b>Gel Doc XR+ IQ/OQ</b> , Image Lab software	
170-8265	<b>ChemiDoc XRS+ System with Image Lab Software</b> , PC or Mac, includes darkroom, UV transilluminator, epi-white illumination, camera, power supply, cables, Image Lab software	
170-8256	<b>ChemiDoc XRS+ IQ/OQ</b> , Image Lab software	
<b>Accessories</b>		
170-8199	<b>Gel Doc XR+ Installation Kit</b>	
170-8299	<b>ChemiDoc XRS+ Installation Kit</b>	
170-7950	<b>White Light Transilluminator</b> , plugs into universal hood	
170-8001	<b>White Light Conversion Screen</b> , optional	
170-8074	<b>Filter</b> , 520DF30, 62 mm, for SYBR Green I/GFP/SYBR Gold/fluorescein stain	
170-8075	<b>Filter</b> , 560DF50, 62 mm, for Cy3/rhodamine stains	
170-8076	<b>Filter</b> , 630BP30, 62 mm, for SYPRO Ruby/Texas Red stains	
170-8081	<b>Filter</b> , standard emission, 62 mm	
170-8098	<b>254 nm UV Lamps</b> , 6, replacement lamps	
170-6887	<b>365 nm UV Lamps</b> , 6, replacement lamps	
170-8097	<b>Standard 302 nm UV Lamps</b> , 6	
170-8089	<b>Mitsubishi Thermal Printer</b> , optional	
170-7581	<b>Mitsubishi Thermal Printer Paper</b> , 4 rolls, for use with Mitsubishi thermal printer	
170-8183	<b>XcitaBlue Conversion Screen Kit</b> , includes viewing goggles and standard detection filter	
170-8008	<b>Orange Fluorescence Reference Plate</b>	
170-3759	<b>Bio-Rad Fluorescent Ruler</b>	
170-3760	<b>Gel Cutter Ruler</b>	
170-8184	<b>Gel Alignment Templates</b> , 3	
170-8026	<b>Image Lab Focus Calibration Target</b>	
170-8027	<b>Image Lab Flat Fielding Discquire</b>	
<b>PharosFX and Personal Molecular Imager (PMI) Systems</b>		<b>Pg 236</b>
<b>PharosFX and PharosFX Plus Systems</b>		
170-9460	<b>PharosFX Plus System</b> , PC or Mac, 110–240 V, includes Quantity One software, sample tray set, fluorescence filters (170-7866, 170-7896) and phosphor imaging filters, USB2 cable	
170-9450	<b>PharosFX System</b> , PC or Mac, 110–240 V, includes Quantity One software, sample tray set, fluorescence filters (170-7866, 170-7896), USB2 cable	
<b>Personal Molecular Imager (PMI) System</b>		
170-9400	<b>Personal Molecular Imager (PMI) System</b> , PC or Mac, 110/240 V, includes Quantity One software, sample tray set, USB2 cable	



Catalog #	Description
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**Accessories for PharosFX and PharosFX Plus Systems**

170-7893	<b>635 nm External Laser Upgrade</b> , for 170-7890, includes 170-7865 filter
170-7892	<b>External Lasers</b> , 488 nm and 635 nm, includes 170-7865 filter
170-7896	<b>Filter 640 nm BP</b> , for Texas Red dye
170-9459	<b>Filter 530 nm BP</b> , for ECL Plus, AttoPhos, SYBR Green I, Alexa Fluor 488, FITC, Cy2, and Pro-Q Emerald dyes
170-7866	<b>Filter 605 nm BP</b> , for ethidium bromide, SYPRO Red, SYPRO Ruby, Alexa Fluor 532 and 546, and Cy3 dyes
170-7865	<b>Filter 695 nm BP</b> , for Cy5 and Alexa Fluor 635 dyes
170-7863	<b>Filter 555 nm LP</b> , for Texas Red dye
170-7867	<b>Blank Filter Holder</b>

**Accessories for PharosFX, PharosFX Plus, and PMI Systems**

170-7811	<b>Sample Tray</b>
170-7812	<b>Multi-Sample Tray I</b> , for small aluminum-mounted screens and microplates
170-7814	<b>Microplate Adaptor</b> , for multi-sample tray I
170-7819	<b>Multi-Sample Tray II</b> , for scanning gels mounted to glass plates

**Accessories for PharosFX Plus and PMI Systems**

170-7845	<b>Imaging Screen-K (Kodak)/Tritium</b> , 20 x 24 cm
170-7843	<b>Imaging Screen-K (Kodak)</b> , 20 x 25 cm
170-7841	<b>Imaging Screen-K (Kodak)</b> , 35 x 43 cm
170-7861	<b>Exposure Cassette-K</b> , for 20 x 25 cm Kodak screen
170-7862	<b>Exposure Cassette-K</b> , for 35 x 43 cm Kodak screen
170-7809	<b>Eraser Screen-K</b> , 110/120 V
170-7806	<b>Eraser Screen-K</b> , 220/240 V

**GS-800 USB Calibrated Densitometer**

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170-7983	<b>GS-800 USB Calibrated Densitometer</b> , PC or Mac, 100–240 V
170-7956	<b>Installation Qualification/Operational Qualification (IQ/OQ)</b> , set of protocols for validating GS-800 densitometer calibration
170-9615	<b>Quantity One Software CFR Module</b>

**EXQuest Spot Cutter**

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165-7200	<b>EXQuest Spot Cutter</b> , includes enclosure, imaging system, fluidics system, robotics, sensors, cutting head, gel tray, microplate rack, wash station
165-7201	<b>EXQuest Spot Cutter with PC</b>

**Accessories**

165-7202	<b>Cutting Tip</b> , 1.0 mm
165-7203	<b>Cutting Tip</b> , 1.5 mm
165-7204	<b>Glass Bottle</b> , 1 L
165-7205	<b>Calibration Pucks</b> , 10
165-7206	<b>Membrane Cutting Head</b> , with 1.0 mm tip
165-7207	<b>Membrane Cutting Tip</b> , 1.0 mm
165-7208	<b>Gel Cutting Sheets</b> , 15
165-7209	<b>Gel Holding Clips</b> , 2
165-7210	<b>Calibration Target</b>
165-7211	<b>Camera Target</b>
165-7212	<b>Micro Tubes</b> , 1.5 ml, 20
165-7214	<b>Bottle Holder</b>
165-7215	<b>Gel Tray</b>
165-7216	<b>Transilluminator Lamp</b>
165-7217	<b>Round-Bottom Microplates</b> , 96-well, 20
165-7218	<b>Ferrule</b> , 10-32, 1/16" OD, 10
165-7219	<b>Bar Code Reader</b>
165-7220	<b>Microplate Holder</b>

