

Molecular Imager



Year of Purchase:

Cost:

The Gel Doc XR+ system enables quick and easy visualization, documentation, and analysis of nucleic acid and protein gels, blots, and macroarrays with a few clicks of the mouse. The system supports fluorescence and colorimetric detection methods. The system enables educators and students 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
- View protein gels stained with Coomassie Blue, silver stain, and other colorimetric gel stains using the [White Light Conversion Screen](#)
- Maintain prior lab protocols as there is no loss in sensitivity compared to UV and ethidium bromide staining

The Molecular Imager Gel Doc XR+ system incorporates high-resolution, high-sensitivity CCD detection technology and modular options to accommodate a wide range of samples and support multiple detection methods including fluorescence and densitometry. The system is controlled by [Image Lab™ Software](#) to optimize imager performance for fast, integrated, and automated image capture and analysis of various samples.

The system accommodates a wide array of samples, from large handcast polyacrylamide gels to small [ReadyAgarose™ Precast Gels](#) and various blots. The system is an ideal accompaniment to PCR, purification, and electrophoresis systems, enabling image analysis and documentation of restriction digests, amplified nucleic acids, genetic fingerprinting, RFLPs, and protein purification and characterization.

Features and Benefits of the Gel Doc XR+ System:

- Gel and blot imaging and analysis are quick and accurate
- Easy to use; very little to no training is required for your students to capture amazing images
- Save and recall all steps for repeatable and reproducible results from class to class
- Optimize the system at setup for image data that is always accurate, reproducible, and free of imaging artifacts

- Wide range of applications with special accessories to preserve sample integrity for downstream research while ensuring user safety
- Comprehensive, automated quantitative analysis of protein and DNA samples in seconds
- Customize and organize data in reports
- Obtain publication-quality results quickly

The Gel Doc XR+ system optimizes reproducibility and reliability of experimental data, enabling quantitative comparisons between different experiments. Using proprietary algorithms, this imaging system is calibrated at setup to ensure:

- Images are in focus at all times, regardless of zoom level or sample position
- Appropriate flat fielding correction is automatically and consistently applied to image data for every application
- Imaging artifacts are automatically corrected

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.

Specifications

Applications

Feature	Specifications
Chemiluminescence	No
Fluorescence	Yes Note: Use the optional XcitaBlue kit if performing SYBR® Safe DNA applications, because the UV to blue conversion screen allows you to visualize DNA samples while protecting against UV damage.
Colorimetry/densitometry	Yes
Gel documentation	Yes

Hardware Specifications

Maximum sample size	28 x 36 cm
Maximum image area	19.4 x 26 cm
Excitation source	Epi-white light and trans-UV (302 nm) are standard (optional 365 nm lamp available); optional trans-white conversion screen and XcitaBlue™ UV/blue conversion screen available.
Illumination control	3 modes (trans-UV, trans white, epi-white)
Detector	CCD
Image resolution	4 megapixels
Pixel size (H x V)	4.65 x 4.65 µm
Filter holder	3 positions (2 for filters, 1 without filter)
Emission filters	1 included (standard), 3 optional
Dynamic range	>3.0 orders of magnitude
Pixel density (gray levels)	4,096
Dynamic flat fielding	Application specific, for all applications
Instrument size (L x W x H)	36 x 60 x 96 cm
Instrument weight	32 kg

Operating Ranges

Operating voltage	110/115/230 V AC nominal
Operating temperature	10–28°C (21°C recommended)
Operating humidity	<70% noncondensing

Automation Capabilities

Workflow automated selection	Application driven; user selected or recalled by a protocol
Workflow automated execution	Controlled by a protocol via application specific setup for image area, illumination source, filter, analysis, and reporting
Workflow reproducibility	100% repeatability via recallable protocols; from image capture to quantitative analysis and reports
Autofocus (patent pending)	Precalibrated focus for any zoom setting or sample height
Image flat fielding**	Dynamic; precalibrated and optimized per application **U. S. patent 5,951,838.
Auto-exposure	2 user-defined modes (intense or faint bands)