

# ChemiDoc™ and ChemiDoc MP Imaging Systems

Fluorescence and Chemiluminescence Detection Without Compromises



## High-Performance Imaging

As sensitive as film, with advanced blot detection technology to determine best exposure for faint and intense bands

## Easy Acquisition Features

Includes image preview, auto-focus, auto-exposure, and additional exposure options

## Convenient Data Storage and Sharing

Export images via USB or network connection

# Imagine No Compromises

- Unmatched fluorescence and chemiluminescence performance
- Powerful and intuitive software
- U.S. FDA 21 CFR Part 11 compliance

## Image Assessment at the Point of Acquisition

Pinch and zoom images on the 12-inch touch screen; access a range of tools with Image Lab Touch Software



## Smart Tray Technology

Automatically recognizes your application



Fluorescent and chemiluminescent blots, stain-free gels/blots, and ethidium bromide, SYPRO Ruby, and other stains.



Coomassie Blue, silver, and other stains.

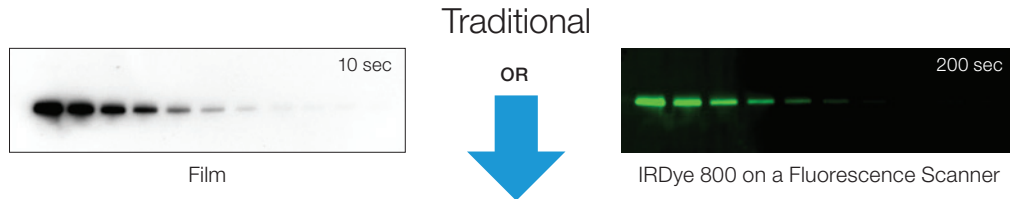


GelGreen or any SYBR® stains.

# MORE THAN TRADITIONAL WESTERN BLOTTING

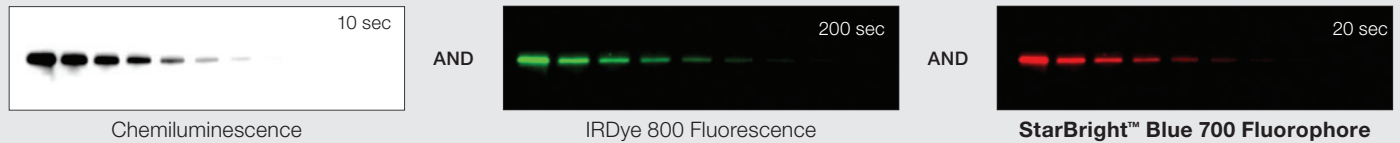
## One instrument. Many options.

Why compromise when a single imaging system can do it all?



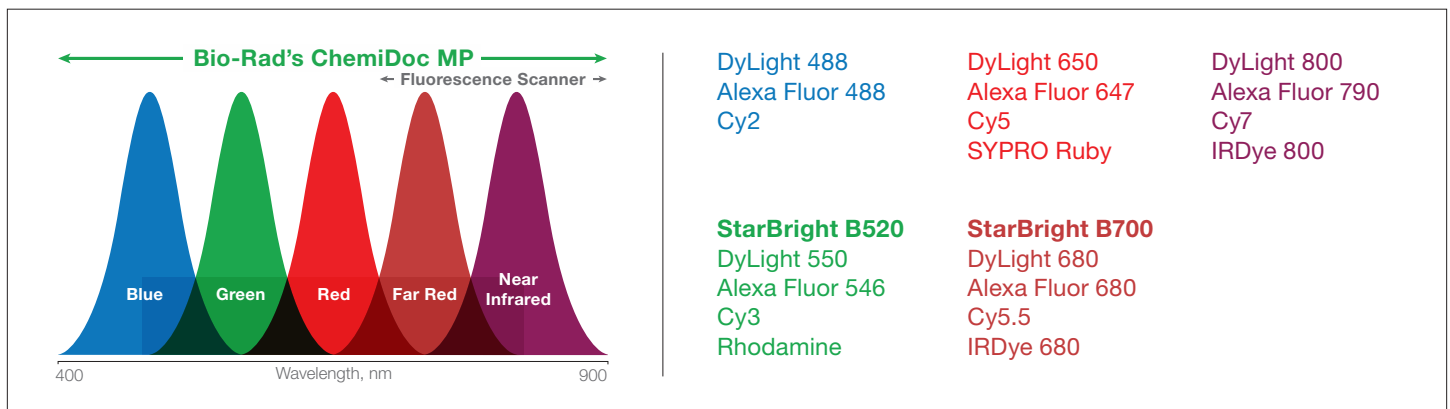
## ChemiDoc MP System

The superior quantitation of digital meets the sensitivity of film and delivers the best fluorescence performance with Bio-Rad's brightest new fluorophore.



## More flexibility in dye selection.

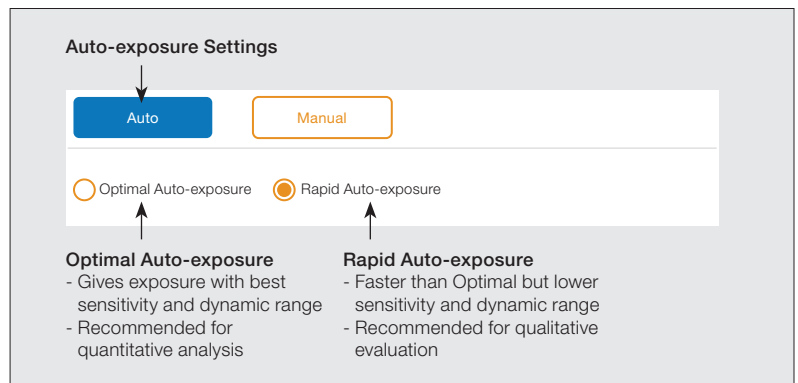
Detect up to three proteins in a single experiment with a wide range of supported fluorophore options.



## Not your traditional software.

Image Lab Touch Software:

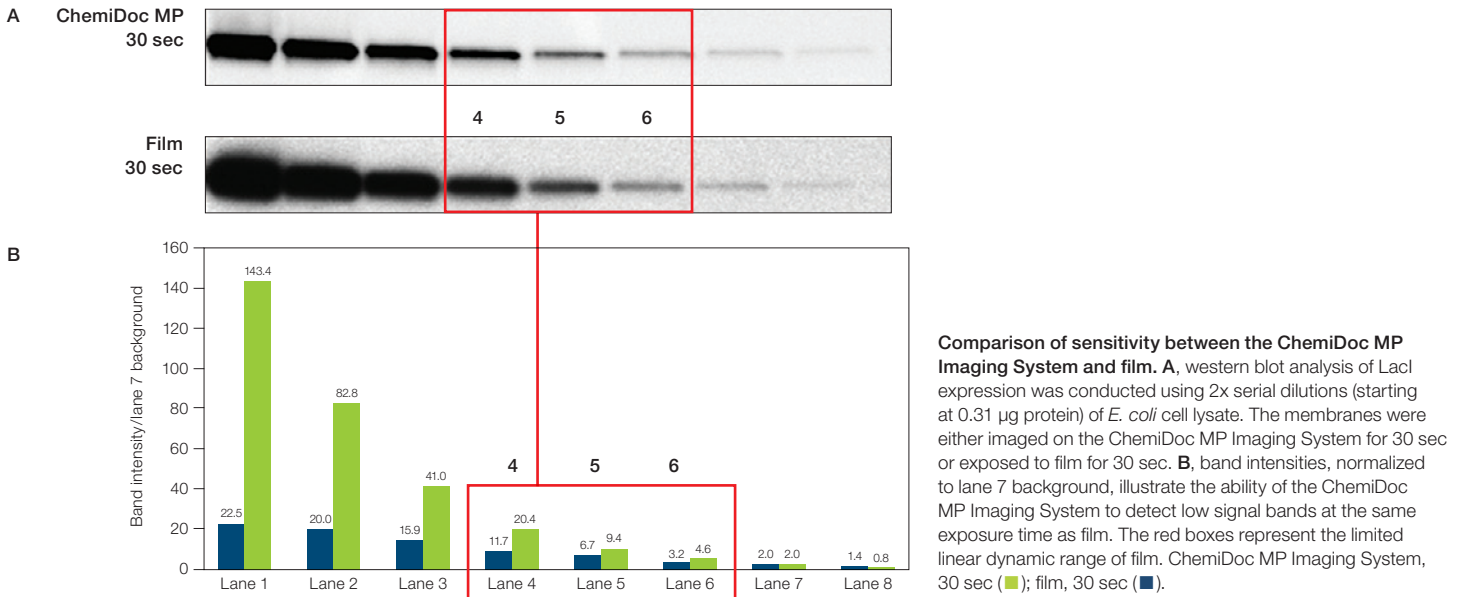
- Teaches as you tap and explore
- Picks optimal light source and filters
- Suggests exposure times



# A BETTER WAY TO WESTERN BLOT

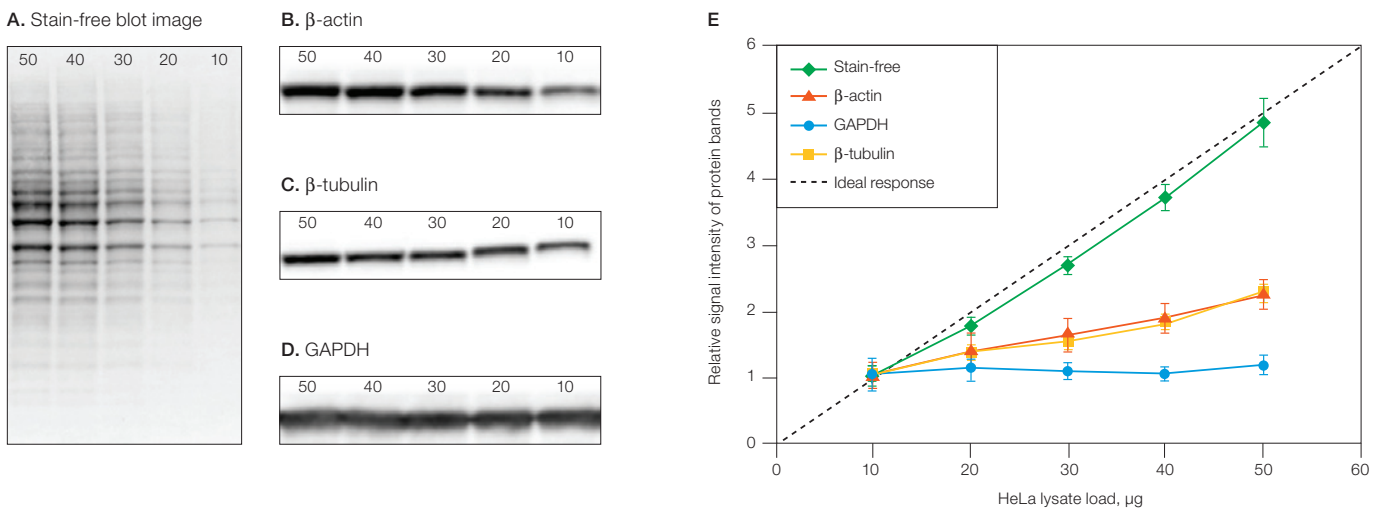
## High-performance chemiluminescence imaging

Get the sensitivity of film without the hassles of film processing or darkroom chemicals.



## A better way to normalize quantitative western blots.

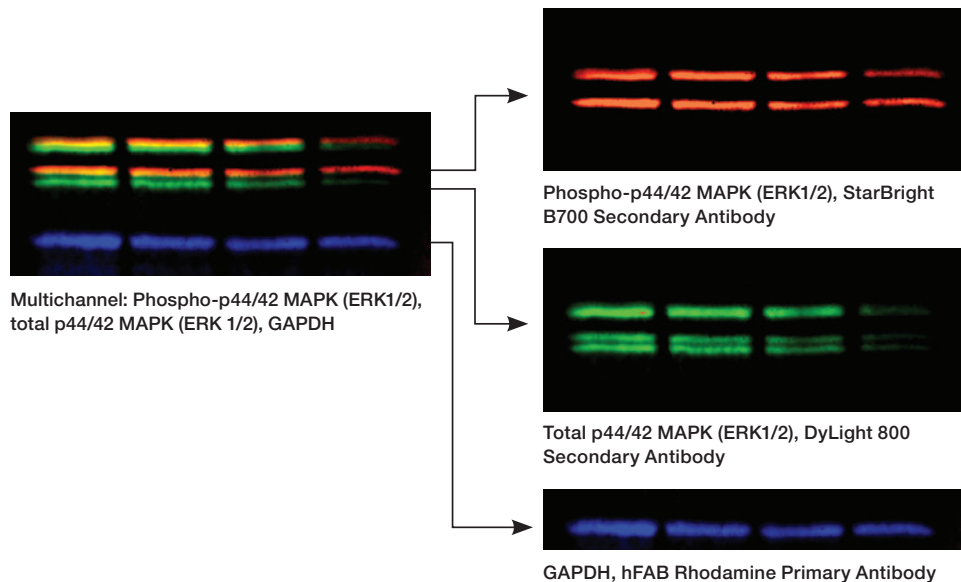
Normalizing blots with housekeeping proteins (HKPs) requires time, money, and additional sample to validate HKP expression and linearity. Total protein normalization using stain-free technology and the ChemiDoc or ChemiDoc MP System allows normalization across a wide dynamic range. Get better, more publishable data without lengthy optimization.



**Comparison of protein normalization using stain-free technology and commonly used housekeeping proteins.** Tenfold dilutions of HeLa cell lysates ranging from 50 to 10 µg were loaded for samples detected with stain-free technology (**A**) and the housekeeping proteins β-actin (**B**), β-tubulin (**C**), and GAPDH (**D**). The protein quantification signal is higher with stain-free technology than with housekeeping genes (**E**).

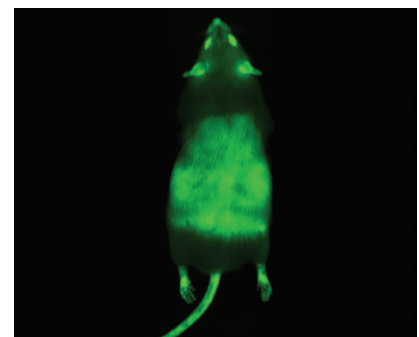
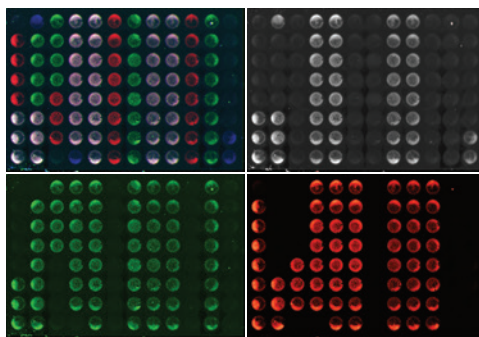
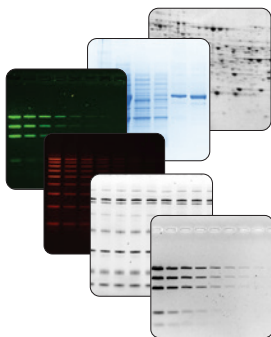
## One blot. Three results. More colors. More answers.

Why strip and reprobe and potentially lose some of your protein or bias your results? Or face the data presentation challenges of cut blots? The ChemiDoc MP System lets you visualize signal from three independent channels on a single blot and allows you to distinguish overlapping signals resulting from even the smallest posttranslational modifications.



## Application versatility

The current pace of research requires application versatility. The ChemiDoc MP System accommodates a wide variety of applications common in protein and nucleic acid experiments, imaging a variety of sample types and detection methods.



Cell-based microplate assay used to quantify HEK 293 cells (25,000–45,000 cell density). GAPDH (rhodamine), mouse anti-actin gamma (DyLight 680), and rabbit anti-p53 (DyLight 800) image was acquired on a ChemiDoc MP System for 24 sec via auto-exposure.

Visualization of the ubiquitous expression of enhanced green fluorescent protein (EGFP) in transgenic mice (partially shaved midsection). The epifluorescent image was acquired on a ChemiDoc MP System for 0.020 sec with a blue LED epi-illumination source and a 532 nm/28 mm band pass filter (Cy2 settings).

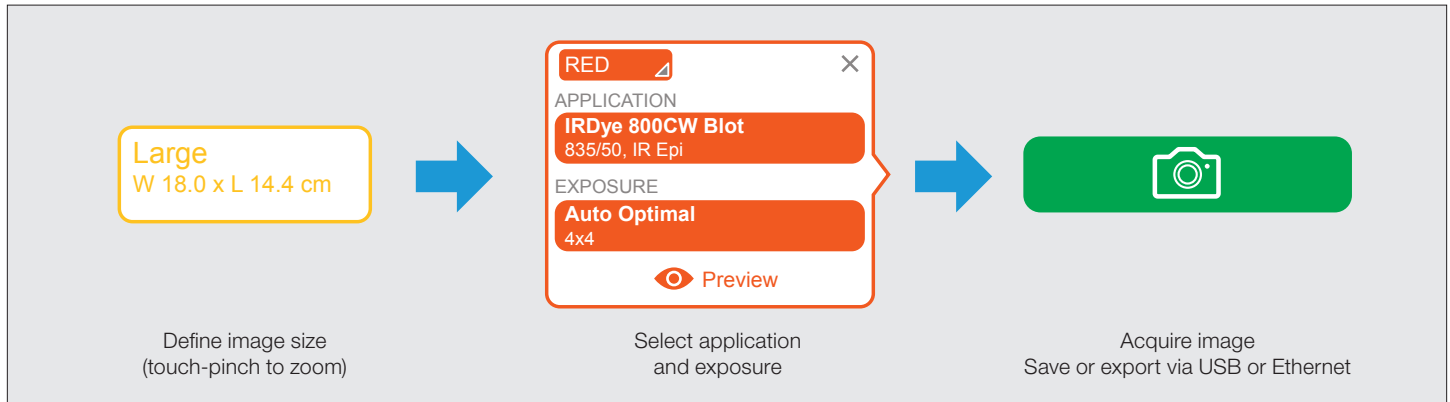


# POWERFUL ACQUISITION AND ANALYSIS SOFTWARE

## Acquire publication-quality images in seconds

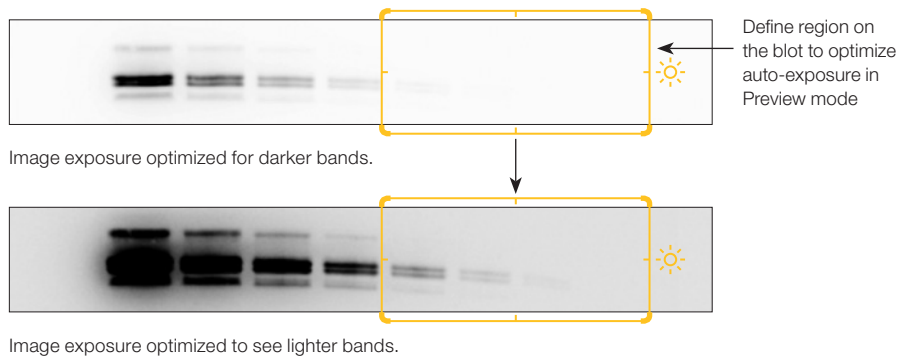
Image Lab Touch Software's intuitive user interface and image acquisition let you acquire exportable images of gels and blots that are ready for publication.

### Easy Workflow



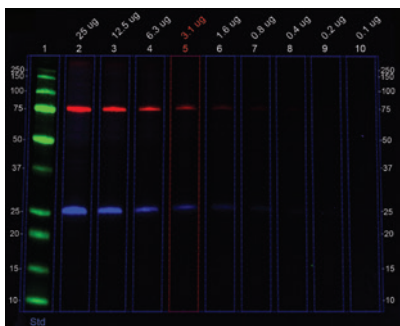
### Optimal imaging every time:

- Automatic camera settings and selection of illumination sources and filters
- Optimized exposure for specific bands of interest

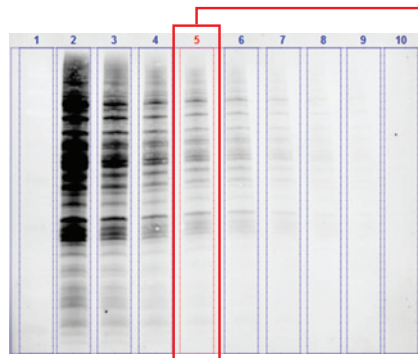


## Analyze with certainty on a PC or Mac

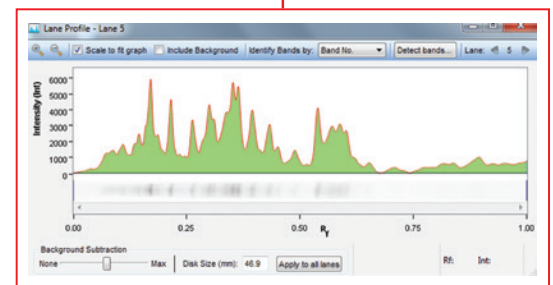
Automated lane and band detection, molecular weight determination, and normalization are just a few clicks away with Image Lab Software.



Annotation to make interpretation and publication easy.

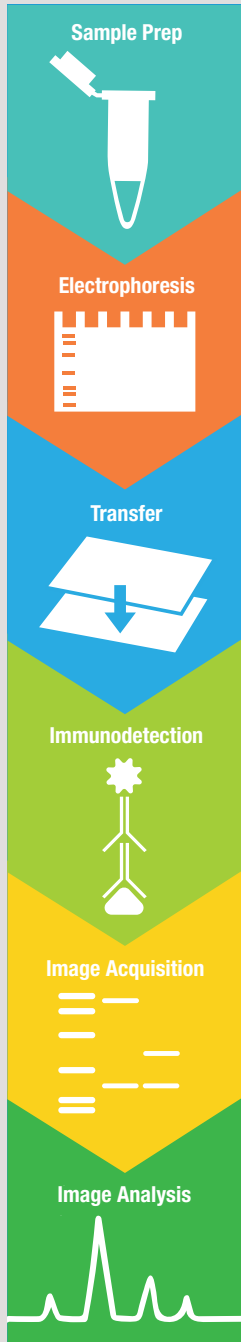


Stain-free imaging allows for total protein normalization.



Lane profiling of total protein signal helps remove background and refine band detection.

More than an imaging system. A fully supported western blotting workflow.



**Sample Prep:**

SureBeads Protein A or G Magnetic Beads

*Easy, fast, and cost-effective for better immunoprecipitation.*

**Electrophoresis:**

Stain-Free Gels

*Rapid protein separation and normalization without the hassles of staining.*

**Transfer:**

Trans-Blot™ Turbo Transfer System

*Get to the finish line faster with transfers as short as 3 minutes.*

**Immunodetection:**

PrecisionAb™ Validated Western Blotting Antibodies

*Sensitivity, specificity, reproducibility — antibodies you can rely on.*

**Image Acquisition:**

ChemiDoc MP Imaging System

*Fluorescence and chemiluminescence detection without compromises.*

**Image Analysis:**

Image Lab Software Family

*Easy to use, automated, and powerful.*

Visit [bio-rad.com/gowestern](http://bio-rad.com/gowestern) to see our complete workflow.

# Experience in design and performance. Built to fit every need.

Image gels and blots and take advantage of an easy upgrade path to multiplex fluorescence imaging.

Features	ChemiDoc MP System	ChemiDoc System
Chemiluminescence imaging with the sensitivity of X-ray film	✓	✓
Multiplex RGB and IR fluorescence imaging	✓	Upgradeable to ChemiDoc MP System
Nucleic acid and protein gel imaging	✓	✓

## Specifications

### Automation Capabilities

Smart Tray Technology*	ChemiDoc Imaging Systems automatically recognize your application-specific tray and adjust imaging parameters and software options accordingly
Auto-focus	Precalibrated focus for any zoom setting or sample height
Auto-exposure	Two auto-exposure algorithms (rapid or optimal)
Image flat fielding	Dynamic; precalibrated and optimized for every application

### Hardware Specifications

Touch-screen functionality	Multitouch capable (2 points) 12" display
Maximum image area (W x H)	21 x 16.8 cm
Detector	Cooled CCD, 6 megapixels
Dynamic range	>4 orders of magnitude
Illumination source	Trans-UV, 302 nm Epi-white Trans-white (requires White Sample Tray) Trans-blue, 450–490 nm (requires Blue Sample Tray) Epi-blue, 460–490 nm excitation** Epi-green, 520–545 nm excitation** Epi-red, 625–650 nm excitation** Epi-far red, 650–675 nm excitation** Epi-near IR, 755–777 nm excitation**
Filters	590/110 nm standard filter to perform protein and DNA gel and blot imaging, chemiluminescence filter, 518–546 nm filter, 577–613 nm filter, 675–725 nm filter, 700–730 nm filter, 813–860 nm filter
Data output	16-bit or 8-bit: SCN, TIFF, JPEG image files
Instrument weight	35 kg (78 lb)
Instrument size (L x W x H)	61 x 51 x 53 cm
Operating voltage	100–250 V
Operating temperature	10–28°C
Operating humidity	10–85% relative humidity (noncondensing)

\* U.S. patent 9,618,733.

\*\* Only with ChemiDoc MP System.

## Ordering Information

Catalog #	Description
12003154	<b>ChemiDoc MP Imaging System</b> , includes blot and gel imaging system, UV/visible light imaging, chemiluminescence, 5 fluorescence channels (RGB, far red, NIR). Includes internal computer, 12" touch-screen display, Image Lab Touch Software, blot/UV/stain-free sample tray
12003153	<b>ChemiDoc Imaging System</b> , blot and gel imaging system, UV/visible light imaging, chemiluminescence, upgradeable for multiplex fluorescence detection. Includes internal computer, 12" touch-screen display, Image Lab Touch Software, blot/UV/stain-free sample tray

### Accessories

12003026	<b>White Sample Tray for ChemiDoc MP/ChemiDoc Imaging Systems</b> , for gels stained with copper, silver, or zinc stains
12003027	<b>Blue Sample Tray for ChemiDoc MP/ChemiDoc Imaging Systems</b> , for gels stained with GelGreen or any SYBR® stains
12003028	<b>Blot/UV/Stain-Free Sample Tray for ChemiDoc MP/ChemiDoc Imaging Systems</b> , for chemiluminescent and fluorescent blots, stain-free gels/blots, and gels stained with ethidium bromide, SYPRO Ruby, Oriole, SYBR® Stains, and Coomassie Blue
1708377	<b>Holder for ChemiDoc MP/ChemiDoc Sample Trays and UV Shield</b>
12003914	<b>UV Safety Shield for ChemiDoc MP/ChemiDoc Imaging Systems</b>
12003915	<b>Gel Alignment Templates for ChemiDoc MP/ChemiDoc Imaging Systems</b>
12005137	<b>IQ/OQ Kit for ChemiDoc MP/ChemiDoc Imaging Systems</b> , for installation qualification/operational qualification
12003263	<b>Upgrade Kit</b> , ChemiDoc to ChemiDoc MP Upgrade Kit, includes all illumination and filters for RGB and near IR/IR fluorescence imaging

### Software

1709690	<b>Image Lab Software</b> , stand-alone version, PC or Mac, for viewing images and 1-D analysis
1709691	<b>Image Lab Software, Security Edition, 1 license</b> , U.S. FDA 21 CFR Part 11 module for Image Lab Software, 1 license, for use with ChemiDoc MP, ChemiDoc, and GS-900 Imaging Systems

Visit [bio-rad.com/ChemiDoc](http://bio-rad.com/ChemiDoc) to learn more about ChemiDoc Imaging Systems.

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SYBR is a trademark of Thermo Fisher Scientific Inc. Image Lab Touch software is based in part on the work of the Cimg project (<http://cimg.eu/>). See license for details at [www.cecil.info/licences/Licence\\_CeCILL-C\\_V1-en.html](http://www.cecil.info/licences/Licence_CeCILL-C_V1-en.html). Image Lab Touch is based in part on libraries from GCC runtime and the Gnu C library.



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