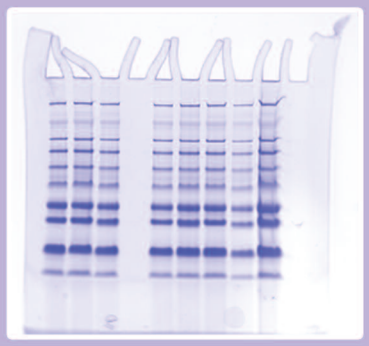
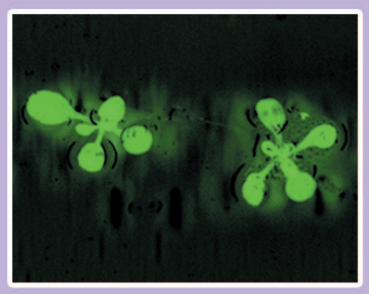
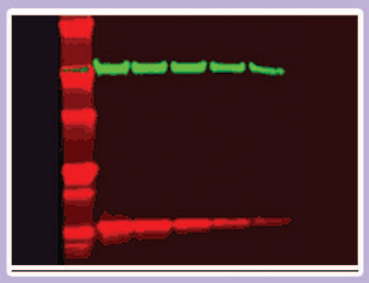
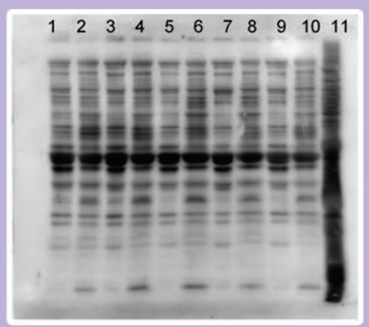
BioSpectrum® 810

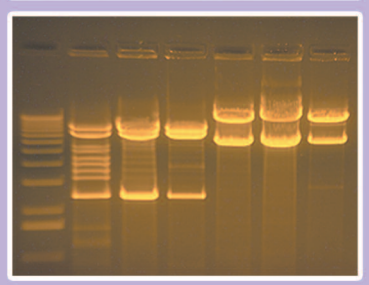
Advanced Imaging System











Achieve Picture Perfect Images!

Chemiluminescence **Colorimetric**

Bioluminescence **Fluorescence**

Multiplexing

New
Leading Edge
MegaCam 810 Camera!
8.1 Megapixel
Resolution!

UVP®

BioImaging Systems for the Science of Life

BioSpectrum® 810 Imaging System

Achieve Picture Perfect Images for
Chemiluminescence | Bioluminescence | Colorimetric | Fluorescence | Multiplex

The BioSpectrum® 810 Imaging System is now configured with the new MegaCam 810 scientific grade CCD camera. Achieve enhanced image capture with the MegaCam 810's dynamic 8.1 megapixel high resolution and high sensitivity capabilities. The system not only captures fluorescent gel images; researchers can also be assured of superior sensitivity for low-light chemiluminescence applications as well. The BioSpectrum offers a complete solution for picture perfect imaging in numerous research applications. Navigation is simplified with the VisionWorks®LS software. The one-touch software controls enable fast and automated image capture and quantitative analysis.

New! MegaCam 810 Scientific Grade CCD Camera supplies high resolution, high sensitivity imaging capabilities

BioSpectrum darkroom is light tight and automated with all functions controlled via VisionWorksLS software

Access ports for connecting to the external **BioLite** high intensity multispectral light source (optional)

Unique gel viewer window blocks UV while allowing visualization of samples without opening the darkroom door

Motorized **five-position emission filter wheel** with EtBr, SYBR Green and SYBR Gold filters; interchangeable standard and custom filters available

Built-in **epi illumination** sources: 365nm UV, 460-470nm blue and broadband white light

LED white light plate supplies uniform background light for colonies, Coomassie Blue and Silver stained gels; place the tray in the side pocket when the illuminator is not in use

VisionWorks®LS software allows image acquisition, enhancement, documentation, printing, publishing and analysis

Chemi Tray for placement of chemiluminescent samples such as Western blots

Quickly adjust the **motorized platform** tray height

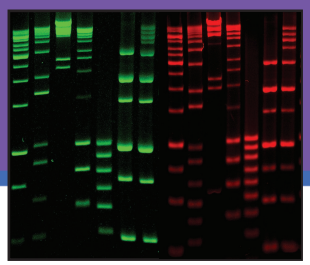
Select from **Benchtop 2UV™, 3UV™ or FirstLight® Transilluminators**

Systems can be configured with a high specification **computer and monitor** (order separately)

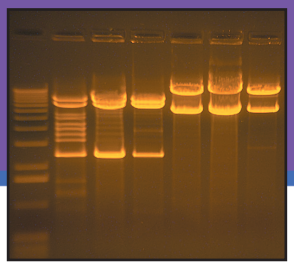
BioLite™ MultiSpectral Light Source (optional) features brilliant and uniform fiber optic epi or transillumination lighting of samples. The light guides easily install through the darkroom access port. Select from standard filter sets (order separately) for excitation and emission of a wide range of fluorescent stains. The BioLite holds up to eight filter for maximizing fluorescence capabilities.

Alexa PAGE

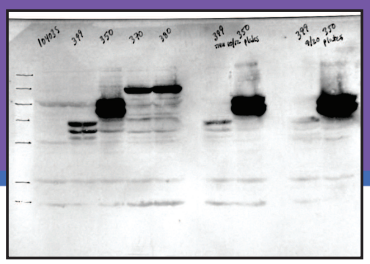
GelGreen/GelRed

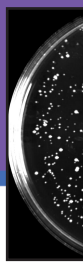


Ethidium Bromide



Autoradiograph



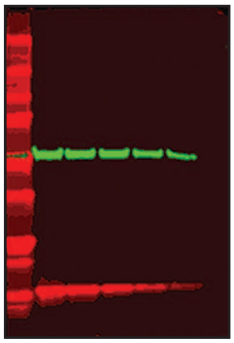


Benefits of the BioSpectrum

Feature	Benefit
Cooled 8.1MPX CCD Camera	High resolution and sensitivity for high quality images. Increased detail for enriched analysis output.
Motorized Lenses	Automated control of lens for quick image acquisition and rapid processing.
Motorized Platform	Height adjustable platform moves to any position in a 10 inch range for optimized image capture. Platform is easily controlled via the software interface.
LED White Light Illuminator	Highly uniform white light for viewing Coomassie Blue, Silver stained and other samples requiring white light transillumination.
Viewing Window	Samples can be viewed through the window without opening the BioSpectrum door.
Light Tight Darkroom	Creates optimum conditions for imaging gels and blots.
Chemi Tray	Uniform black background for ideal chemiluminescent imaging.
Epi Illumination Sources	Built-in illumination sources, for positioning and exciting samples from above, includes 365nm UV, blue light and white light.
Access Ports	Modular design enables connection of numerous external sources for enhanced imaging techniques and image acquisition.
Motorized Filter Wheel	Five-position filter wheel accommodates multiple filters. Programmable filter wheel for automatically selecting the appropriate filter.

Featured Applications

The BioSpectrum Imaging System enables imaging of multiple applications including chemiluminescent (Westerns, Northerns and Southerns), fluorescent, bioluminescent and colorimetric samples. Application Notes and referenced articles can be accessed from UVP's web site. Two salient imaging applications are noted:

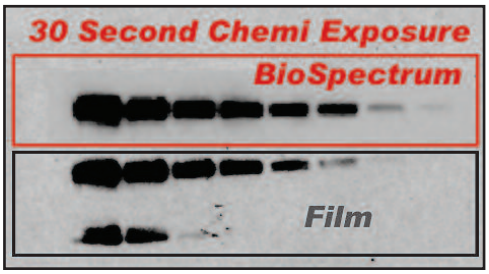


Multiplex Imaging

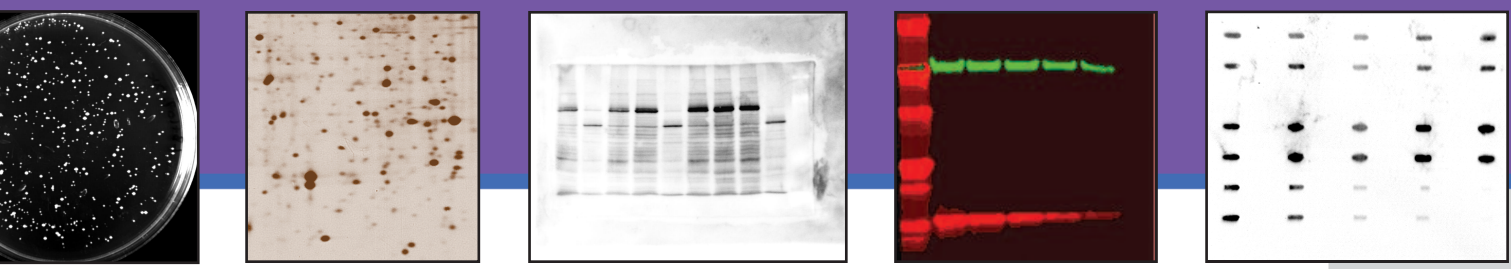
The BioSpectrum permits multiplexing so that several proteins in a sample can be detected and analyzed at the same time on a single protein blot. The BioSpectrum configured with BioLite MultiSpectral Light Source provides a full range of wavelengths for excitation of samples. The system offers rapid, high resolution image capture through the use of a cooled CCD camera and high sensitivity lens. Images are captured and processed with VisionWorksLS Software to composite the pseudocolored images.

Chemiluminescent Imaging

Chemiluminescent imaging of protein blots using the BioSpectrum greatly speeds up and simplifies analysis. Once positioned on the imaging platform, the membrane is focused, and the image is captured with a ***one button preset*** in VisionWorksLS. Multiple captures are easily taken to achieve a full range of exposures using the Sequential Integration feature. The sensitivity of chemiluminescent protein blotting imaging is compared to film (shown right), demonstrating that the BioSpectrum with a cooled CCD camera is superior to film in sensitivity, accuracy, dynamic range, speed and simplicity. Due to the high sensitivity and resolution of the BioSpectrum Imaging System, the resultant image is both quantitative and of publication quality.



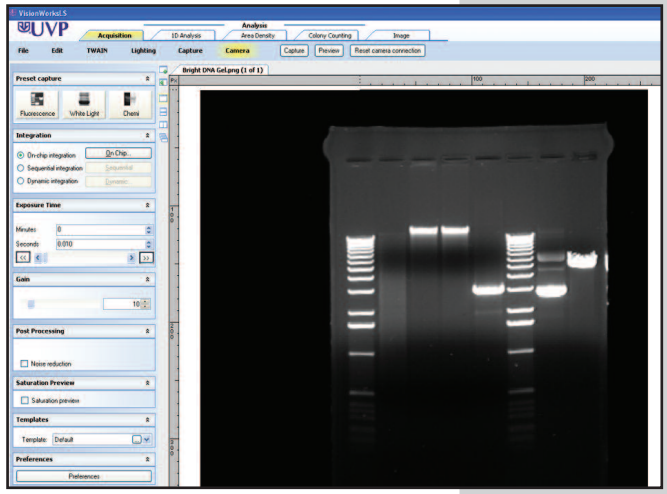
Chemiluminescent blots *comparing film to CCD capture shows the BioSpectrum is more sensitive than film.*



VisionWorks®LS Software

VisionWorksLS is a sophisticated image capture and analysis software package with comprehensive tools to facilitate the capture of chemiluminescent, fluorescent or colorimetric stained gels, blots, colonies and membranes. Capabilities include:

- Extensive image acquisition functions
- Image enhancement capabilities
- 1D and area density analysis plus colony counting function
- One-touch automated macros
- User-defined templates and preference settings
- Support for 21 CFR Part 11 compliance
- Report generation and export of data to Microsoft Excel



***Software Control**. User-friendly, one-touch simplicity for automating image capture and analysis!*

***Camera Control and Image Capture**. Camera menu guides the user through the intuitive image acquisition process.*

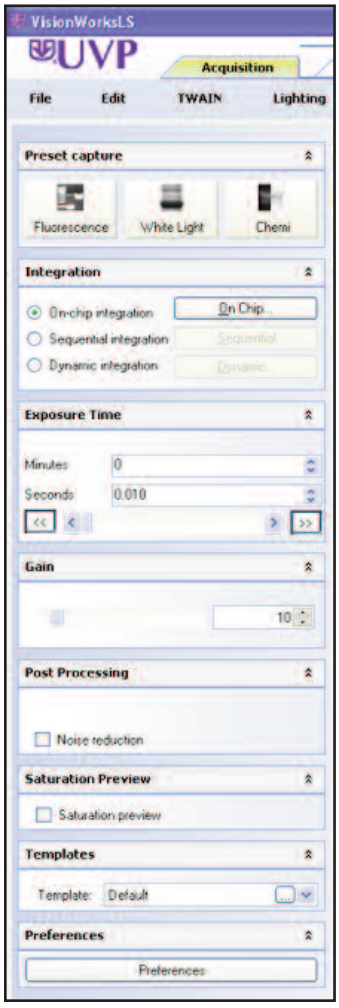


Image Capture Capabilities

The MegaCam 810 camera provides high resolution and sensitivity for image capture as well as for the ability to control capture settings. The integrated software menu allows selection of functions to achieve superior captured images.

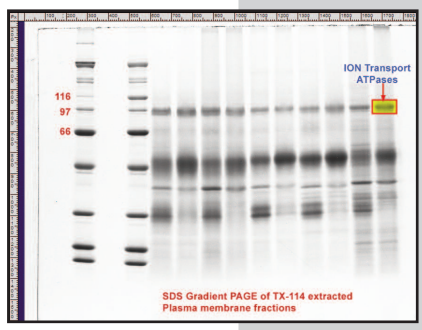
- **Integration** functions include on-chip integration for the simplest image capture. Sequential integration captures multiple pictures taken at a uniformly increasing exposure time. Dynamic integration captures images at set intervals.
- **Binning** allows a quick lower resolution preview of the image before continuing with a longer full resolution exposure.
- **Saturation preview** assures imaging results are quantifiable by detecting over-exposure of bands during live preview.
- **Imaging templates** permits creation of custom settings to enable quick image capture with reproducible results.
- **AutoExpose** enables the perfect image exposure to be captured automatically below the saturation level of every pixel in the image for the widest dynamic range possible and the best quantitative analysis of bands.

Image Enhancement Tools

VisionWorksLS software offers many image enhancement features, process filters and annotation capabilities for visualization and publication.

- **Annotation** can be added in the form of text, lines, highlights and more.
- **Filter tools** include align, rotate, emboss, sharpen, resize, starfield subtraction and background correction.
- **Spatial calibration** determines image scale and measures lengths, angles and areas.

***Annotation.** Overlay non-destructive annotation or "burn" the annotation into an image for permanent documentation.*

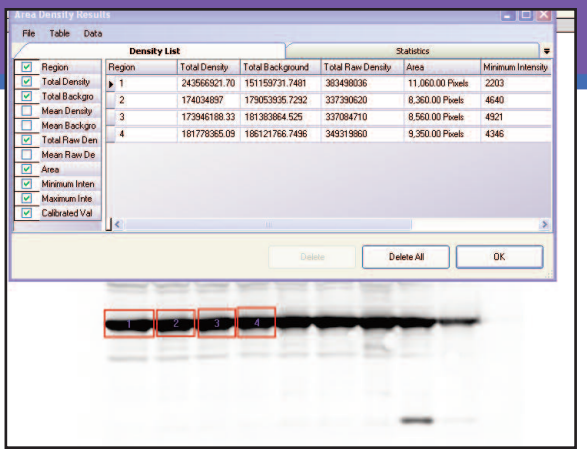


VisionWorksLS Capabilities

Image Analysis Capabilities

VisionWorksLS analysis includes comprehensive tools for in-depth image analysis. The simple, intuitive functions automate your experiments with accurate quantitation and data generation.

- 1D lane analysis
- Plant imaging
- Protein quantitation
- Western blot densitometry
- GFP expression
- Lane profile graphs
- Intensity histograms
- Concentration curves
- Area density
- Molecular weights
- Quantitative PCR
- Colony counting
- Multiplexing and more



Area Density for Western Blots. *Quickly determine relative intensities of Western blots and more.*

One-Touch Automated Macros

Create personalized, custom macros to automate routine, time-consuming procedures involving image capture, enhancement, analysis and data archiving. Record keystrokes that perform a series of complex functions within the software. Assign a function key to the recorded macros for ***one-touch automation***. The macros simplify operations to prevent user errors. Macros can also be used to auto-adjust dark chemi blots to perfection.

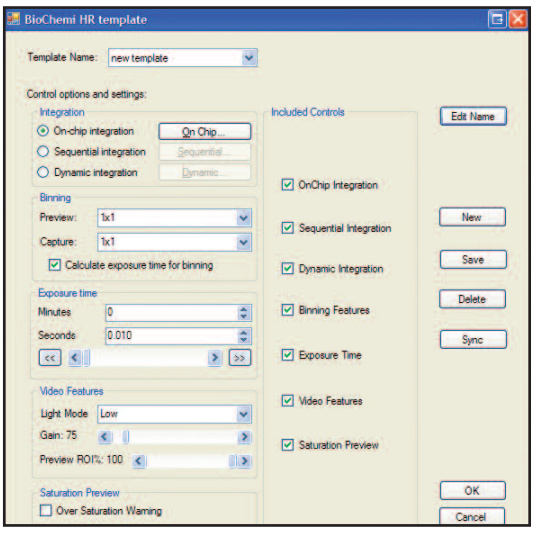
- Name and describe the custom macro
- Acquire a typical image for analysis
- Record the keystrokes required for analysis
- Save the custom macro in the Macro dropdown menu

Record Macros. *For repeat procedures.*

User Profiles, Templates and Preferences

Researchers can personalize their workspace preferences, save the profiles by user name and set up user accounts with passwords to protect user data.

User defined templates are great time savers and allow users to set the darkroom and camera settings to quickly and easily capture a wide range of samples. Select from several pre-set capture templates which includes a program for acquiring a series of multiple exposures of chemiluminescent Western blots.



Templates. *Define custom settings.*

Reports, Export Data and History Tracking

- Create detailed and user-configured reports showing extensive analysis results on MW, Rf, precise position of bands, band intensities, area density calculations, etc. Export data to Microsoft Excel.
- VisionWorksLS software enables image history tracking with change logs to support 21 CFR Part 11 compliance.

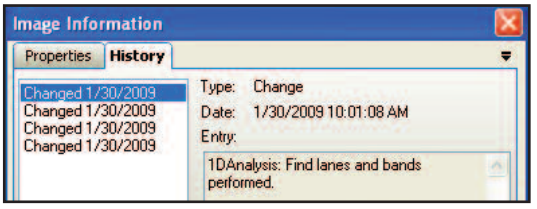


Image History. *Record changes to images.*

Ordering Information & Specifications

BioSpectrum®
MultiSpectral Imaging System

Each system includes: Camera and lens, darkroom with motorized or manual platform, three emission filters, white light illuminator, choice of transilluminator and VisionWorksLS software. ***System configurations may vary by country. Contact UVP for system details.*** Installation Qualification and Operational Qualification (IQ/OQ) documentation is available.

Ordering Information

BioSpectrum 810 Imaging System

VisionWorksLS Software Specifications

Capabilities:	Image acquisition/analysis
Controls:	Interface with camera, darkroom
Tools:	Macros and templates, plus image enhancement tools
Documentation:	Create reports and export data
Compatibility:	Win XP, Vista 32 bit, Win 7 32 bit

Ask about software network versions for multiple users.

MegaCam 810 Camera Specifications

CCD Bit Depth:	16 bit
File Bit Depth (A/D):	16 bit
Grayscale Range:	65,536
Pixel Resolution:	3296 x 2742
Megapixels:	8.1
Cooling Type:	-35° C from Ambient Thermoelectric
Chip Source:	Kodak 4/3" KAF-8050
Binning Modes:	1 x 1 thru 8 x 8
PC Connection:	USB 2.0
Quantum Efficiency Peak & Chemi 425nm:	50% & 44%
Lens (Motorized):	F/1.2 50mm Large Format (LF) Lens F/1.4 30mm LF Lens F/2.8 24-70mm LF Zoom Lens

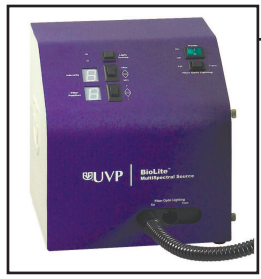
Darkroom Specifications

Epi Lights:	White Light, 365nm UV, 460-470nm Blue
Transillumination:	White Light Illuminator (27x27cm) Choice of UV Benchtop or FirstLight Transilluminator
Emission Filters:	Five position motorized wheel with EtBr (580-630nm), SYBR Green (510-560nm), SYBR Gold (520-620nm) Additional filters available
Controls:	Software automated with templates
Platform:	Motorized with 10 in. range or Manual control (with manual BioSpectrum darkroom)
Dimensions:	17.5W x 17.5D x 36.6H in. (44.5 x 44.5 x 93cm)

BioSpectrum Accessories

Thermal Printer

generates archive quality, 256 gray scale prints. Glossy and matt papers are available. Paper rolls easily install in seconds.



BioLite™ MultiSpectral Source

supplies a directed epi or transillumination fiber optic lighting with filters for excitation of a wide range of fluorescent stains including multiplex Western blots, DIGE 2D gels, microplates and more. BioLite and filters are ordered separately. Contact UVP for standard and custom filter sets.

UVP®

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For a quote or additional information contact:

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