

Box mini

**MULTI FLUORESCENCE
AND CHEMILUMINESCENCE
IMAGING SYSTEM**

**DETECTION WITH
A DIFFERENCE**



REAL IMAGING FOR REAL SCIENTISTS

Western blot and gel imaging remain the cornerstones of life science research. With so many ways to image chemiluminescent, fluorescent and visible dyes you need to know which gives you real results.

At Syngene, our full focus is directed at only developing imaging systems. We have been doing this for over 30 years. We have full control over all processes from being part of an organization that owns the CCD camera manufacturing company to developing hardware and writing our own software in-house. We listen to scientists and then, using our extensive understanding of the science of imaging, we deliver high performance automation that's quick and simple for everyone in the laboratory to use. **See your research through our technology - your blot and gel images will never look better.**

POWERFUL

Built on the successful **G:BOX** range, the **G:BOX mini** is a compact, multi-application powerhouse for accurately imaging fluorescence and visible gels, multiplexed fluorescence westerns, stain-free gels and chemiluminescent blots. Fully integrated with single click computer controlled intuitive GeneSys software, you'll get great results every time.

FAST

G:BOX mini features the option to use not just white LEDs but multi-color, blue, green, red and infra-red high intensity LEDs which are up to 200 times brighter than standard LEDs, giving you faster captures and brilliant multiplexed fluorescence images.

ACCURATE

Combining a unique motorized stage and cooled, high resolution 6 or 9-megapixel camera means your **G:BOX mini** can generate true-to-life, accurate optical images, not just digitally enhanced ones. With a **G:BOX mini** you'll be able to distinguish between close chemi and fluorescent bands or spots even on complex gels and know they're really part of your data.

FUTURE-PROOF

With our guarantee of free software upgrades not just today but throughout your system's life, your **G:BOX mini** will always have the latest imaging capabilities as new techniques come into the working lab.





“YOUR BLOT AND GEL IMAGES
WILL NEVER LOOK BETTER”

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TOP IMAGING FROM TOP TECHNOLOGY



LUXURY LENS

Great images start with a great lens and this F/0.95 motor driven lens with data feedback and automated focus is the best. Using GeneSys software, the **G:BOX mini** easily controls lens aperture size, focus and zoom to get the results you want to see.



HIGH RESOLUTION CAMERAS

Choose between a super-high 6 or 9-megapixel resolution camera. These work hard over a range of wavelengths to ensure you'll separate those close fluorescent bands and spots even on 2D gels.



SUPER LOW COOLING

Superior Peltier cooling of the camera lets you increase exposure times to detect your faint chemiluminescence without adding annoying background noise.



FILTER CHOICE

A 7-position motor-driven filter wheel controlled by GeneSys software allows you to add the filter for the fluorescent stain you like to work with. Since imaging ethidium bromide and SYBR[®] stained DNA gels are common, we've even included a UV filter to get you started.



REAL IMAGING STAGE

When you're working with smaller and low light emitting gels and blots, an automatic motor driven stage with automated focus is brilliant because it lets you get your samples closer to the camera, generating true-to-life optical images and not just digitally enhanced copies.



TOTAL CONTROL

Easily integrating a **G:BOX mini** to your choice of PC and printer gives you greater flexibility than using an integrated tablet, allowing you to run the GeneSys touch screen controls on a large screen, store a large number of images and rapidly print low resolution all the way up to publication quality pictures.



RIGHT LIGHTING, RIGHT APPLICATION



WHITE LIGHT

To position your samples, see visibly stained blots and colored markers on Westerns, the **G:BOX mini** comes with overhead environmentally-friendly, long-life white LED EPI lighting.

HI-LED EPI LIGHTING OPTIONS

When you want to image multiplexed fluorescent gels and blots the **G:BOX mini** can be configured with the option of HI-LED RGB, RIR or RGBRIR. HI-LEDs are up to 200 times brighter than standard LEDs, giving you faster exposure times and great images in just one click, making the **G:BOX mini** an unrivalled, cost-effective alternative to laser-based technology. Using these high powered HI-LEDs fitted with special narrow band pass filters allows you to accurately image multiplexed blots/gels with minimal 'cross-talk' between dyes.



UV TRANSILLUMINATOR OPTION

If you simply need to see ethidium bromide stained DNA gels and stain-free protein gels then opt for the slide in and out, easy access 302nm UV transilluminator. 254nm and 365nm wavelengths are also available.

VISIBLE TRANSMITTED LIGHT OPTIONS

For viewing Coomassie Blue, silver stain and other visible stained gels, a conversion screen which you can place over the UV transilluminator to produce a large, evenly illuminated white light is available.

BLUE LIGHT CONVERTER SCREEN

For viewing 'safer' fluorescent dyes such as SYBR Safe, you can choose to illuminate with the optional blue conversion screen which sits over the UV transilluminator producing trans-blue illumination at 465nm.

BLUE LIGHT TRANSILLUMINATOR OPTION

For visualizing many fluorescent dyes including ethidium bromide and the safe dyes without using UV, you can choose the 470nm UltraSlim Blue LED transilluminator.

GENESYS SOFTWARE LOAD AND GO IMAGING



The **G:BOX mini** is powered by GeneSys 'application driven' image capture software containing an extensive database of dyes, stain-free options and imaging protocols. For quick and easy imaging with a **G:BOX mini**, all you need to know is the size and type of gel or blot you're using and GeneSys automatically selects the right lighting, filters and focus for you to get the perfect image.

CUSTOMIZABLE SETTINGS

If you prefer to choose your own settings, you can even use GeneSys in manual mode. Alternatively, if you're running several repeat applications and want to automate the image capture, you can save a protocol of sample type, dyes, lighting, filters, focus and sample size to set up one button quick image capture.

VERSATILE MULTIPLEXING

Using GeneSys in the **G:Box mini** you can image up to four different fluorophores per experiment and you can choose to see them as a multi-color image, as a color overlay or as single images making it easier for you to find the information you want from your gel or blot.

“GENESYS IS A TRULY UNIQUE APPLICATION DRIVEN SOFTWARE UNEQUALLED BY OTHERS”

Select gel or blot or manual mode

Choose from any saved configurations for faster imaging



SENSITIVE WESTERNS

When you're imaging low light chemiluminescence Western blots, you can use the GeneSys binning feature to reduce exposure times or increase sensitivity. Binning combines pixels into 2x2, 3x3, 4x4, 5x5 or 6x6 formats to produce a "super pixel" which collects more light, increasing sensitivity or speeding up image capture time. GeneSys also lets you generate one image or a series of timed images of your Westerns. You can even image visible/rainbow molecular weight markers and automatically overlay them on your chemiluminescent image making sure that you have perfect Western blot images every time.

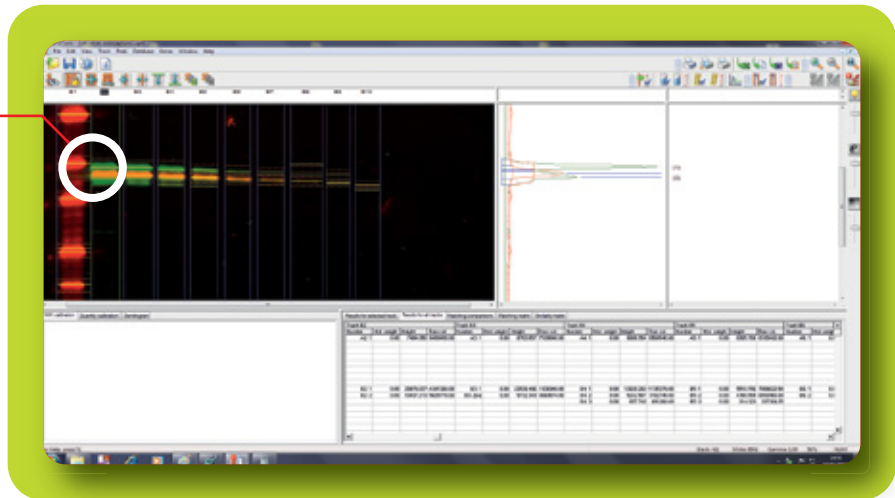
PICTURE PERFECT

The **G:BOX mini** comes with a calibrated camera which automatically eliminates hot pixels or imperfections, generating a clear background free from 'speckles' or 'spots'. The GeneSys software includes Dynamic Fielding to automatically correct white light shadows, producing a perfect 'flat' background and auto gamma control to automatically set the black and white levels, improving definition between bands or spots and image background. The high resolution 6 or 9 MP cameras will produce superb, publication ready pictures of your results and can save as proprietary SGD or TIFF, JPEG or BMP formats.

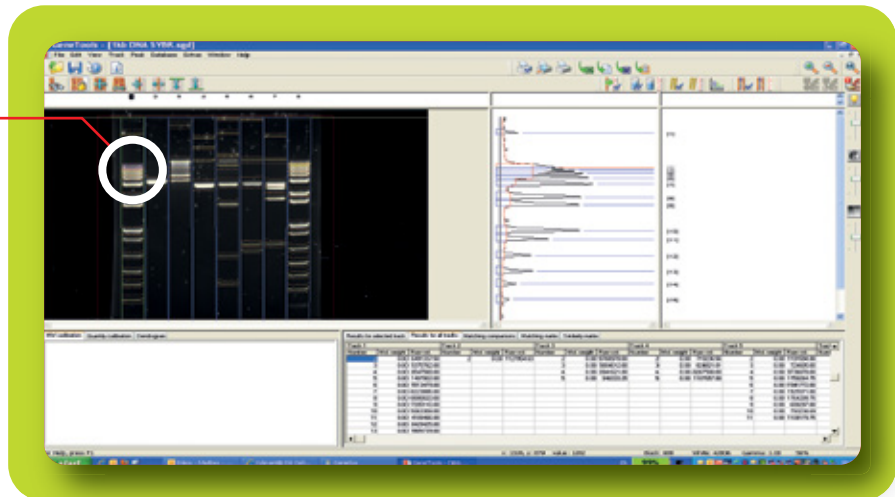
GENETOOLS FAST IMAGE ANALYSIS

The **G:BOX mini** uses GeneTools image analysis software to let you rapidly detect lanes and bands, view densitometry profiles, providing superb quality data from your collected images. With multiplexed gels and blots you can even analyze overlaid channels to find bands in separate channels, at the same time as viewing individual channels. Your data is easily saved as image files or can be exported directly to Excel and Word.

Accurately quantify a multiplexed Western blot using GeneTools



Automatically detect lanes and bands and easily add molecular weight ladders with GeneTools



“IT HAS NEVER BEEN EASIER TO ANALYZE GELS OR MULTIPLEXED BLOTS”

APPLICATIONS INCLUDE:

- 1-D gel analysis
- MW/BP calculation
- Multiplexed gels and blots
- E-gels
- Colony counting
- Adding molecular weight ladders
- Band matching with dendrograms
- Spot blots, slot blots
- Band quantitation (automatic and manual)
- GeneDirectory (option) for extended band matching, cluster analysis, VNTR analysis, genotyping, RFLP studies, dendrogram generation and bootstrapping.

WHAT DO YOU WANT TO IMAGE?

The **G:BOX mini** is so versatile that the system can image any of these fluorescence, chemiluminescence and visible applications:

- **Chemiluminescence Western blots**
- **X-ray films of chemiluminescent blots**
- **DNA or RNA stained with ethidium bromide, SYPRO or SYBR dyes on agarose gels**
- **Coomassie blue, Texas Red or silver stained proteins on acrylamide gels**
- **Stain-free gels**
- **Fluorescent blots stained with Qdots, DyLight, Alexa Fluor, Cy Dyes, and IR dyes**
- **GFPs**
- **Colonies or plaques on agar plates**



TIME-SAVING MULTIPLEXING

Using a **G:BOX mini** you can capture a broad dynamic range of fluorescence, giving you exceptional linearity and accurate quantification. The GeneSys software helps you easily detect up to four different fluorophores on the same gel or blot and automatically overlays data from each channel, while letting you view individual channels to see where bands overlap. You can normalize band intensity values to another protein or loading control so you can save time by using the same blot without having to strip and re-probe.

ENHANCING YOUR MULTIPLEXING IMAGING CAPABILITIES

Using a combination of different fluorescent dyes in conjunction with our excitation light sources and filter combination will allow you to multiplex up to four colors, permitting you to study several proteins on the same blot.

Protein:
SMAD-3
(50kDa),
DyLight488™.
Pseudocolor
purple.

Protein:
GFP
(25kDa),
DyLight800™.
Pseudocolor
red.

Protein:
 α -tubulin
(35 kDa),
DyLight649™.
Pseudocolor
green.

Figure 1 - Multiplexed Fluorescent Western blots

The multiplexed western blot image was captured using a **G:BOX mini 6** system with GeneSys image capture software. The Western blot sample was a courtesy from Rockland™ antibodies & assays. DyLight™ is a trademark of Thermo Fisher Scientific Inc.

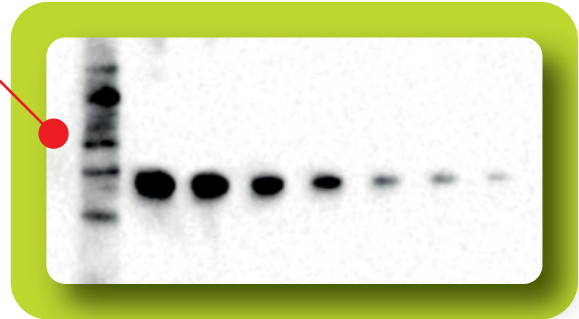


SMART CHEMILUMINESCENCE

When you're imaging chemiluminescence blots it's often difficult to get the right exposure time. Using GeneSys, you can set the **G:BOX mini** to give you the optimum exposure depending on whether you want a quick or a high-quality image. Since the dynamic range of the **G:BOX mini** is better than X-ray film you'll get more accurate quantifiable data too. You can even capture images of visible protein markers and using GeneSys you can overlay them automatically on your chemiluminescent image to make your molecular weight calculations easier.

Figure 2 - Chemiluminescence Western blot

SDS PAGE: SERVAGel TG PRIME 8%
 Blotting: Xpress PVDF Blotting-Kit
 Transferrin diluted 2-fold (5.0ng - 4.8pg)
 1st AB a-human-Transferrin, 2nd AB a-rabbit-IgG-HRP
 SERVALight Polaris CL HRP WB Substrate.
 The image was captured on a **G:BOX mini 6**



SIMPLE STAIN-FREE IMAGING

The **G:BOX mini** comes with pre-set stain-free imaging protocol in the GeneSys software so you can rapidly capture perfect accurate images of your protein gels without all the hassle of staining and de-staining using dyes such as Coomassie Blue.

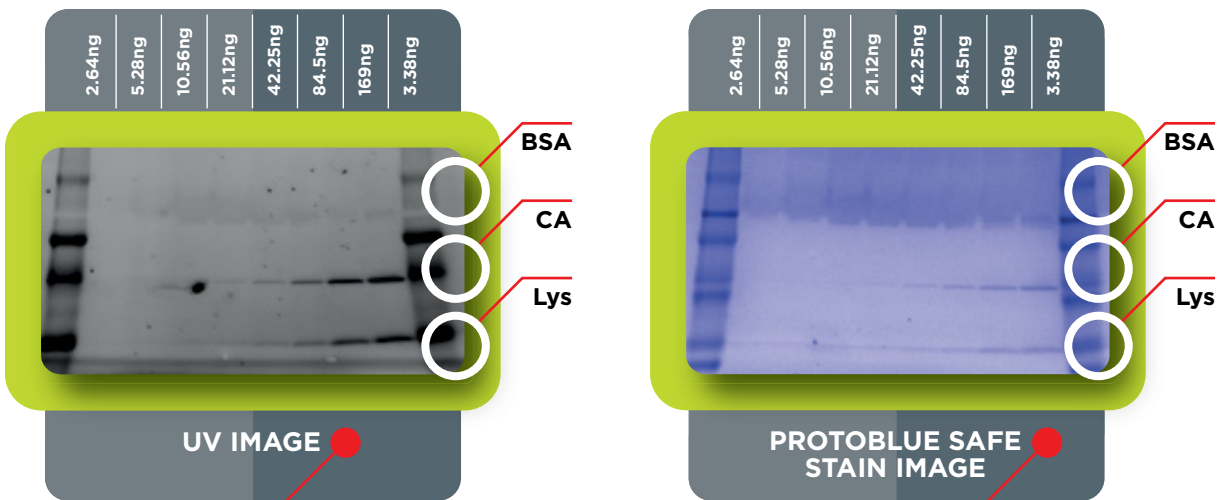


Figure 3 - Stain-free gel compared to ProtoBlue safe stained protein gel

Serial dilutions (338-2.64ng) of a protein mixture (BSA, Carbonic anhydrase and Lysozyme) were run on a Criterion 4-20% TGX Stain-Free gel and imaged with UV on a **G:BOX mini 6** system and additionally stained with ProtoBlue Safe stain. The linearity and sensitivity of the stain-free method is comparable to the ProtoBlue Safe stain method.

SPECIFICATION



G:BOX MINI 6



G:BOX MINI 9

SYSTEM		
Image resolution (megapixels)	6	9
Effective resolution (megapixels)	18	27
A/D	16 bit	16 bit
Greyscale	65,536	65,536
Quantum Efficiency (@ 425nm)	73%	73%
Lens (motor driven)	F0.95	F0.95
Motor drive Stage	True optical imaging	True optical imaging
Filter wheel (7-position motor driven)	Yes	Yes
UV filter	Yes	Yes
Use with external PC and printer (not included)	Yes	Yes
LIGHTING		
Epi LED White Lights	Yes	Yes
HI-LED (red, blue, green)	Optional	Optional
HI-LED (red, infrared)	Optional	Optional
HI-LED (red, blue, green, infrared)	Optional	Optional
Visible light converter	Optional	Optional
Blue converter screen	Optional	Optional
Slim slide-out UV transilluminator (20cm x 20cm)	Optional - 254, 302, 365nm wavelengths available	Optional - 254, 302, 365nm wavelengths available
UltraSlim Blue LED transilluminator	Optional	Optional
Gel size (cm)	10 x 12	10 x 12
DIMENSIONS		
Max image area (cm)	15 x 12	15 x 12
Min image area (cm)	10 x 8	10 x 8
W x H x D (cm)	40 x 64 x 52	40 x 64 x 52
Weight (kg)	Approx. 40	Approx. 40
Power Input (V)	100-240	100-240

Over 75,000 scientists world-wide in pharmaceutical and biotech companies, as well as academic and government institutions, have chosen Syngene as their expert imaging partner. If you'd like to find out why, please contact us or one of our distributors for more information and a demonstration of the revolutionary **G:BOX mini**.

Please refer to www.syngene.com for all ordering information

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