

S Y N G E N E



**G:Box mini**

Superior detection with  
quantifiable results

Chemiluminescence and Fluorescence imaging

# G:Box MINI RANGE

## Why Syngene?



Established in 1997, Syngene is a global leader in gel documentation systems. Providing rapid imaging and precise analysis for various applications, including visible gels, multiplexed fluorescence westerns, stain-free gels, and chemiluminescent blots.

With almost 40 years of imaging expertise and 20 years of making imaging systems, the G:Box mini range offers top-tier data quality across diverse applications such

as gels, blots, plates and plants bioluminescence in a convenient size. Trusted by thousands of scientists worldwide, our systems contribute accurate data to significant global projects in leading pharmaceutical companies and research institutes.

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## Features

This compact system may be small, but it is packed full of features to help you seamlessly integrate the G:Box mini into your research.



### Sensitive

With a wide dynamic range, detect both weak and strong bands on the same blot without compromising quality using intuitive GeneSys image capture software. A wide aperture lens and a high-resolution camera allow for unmatched image quality and sensitivity.



### Versatile

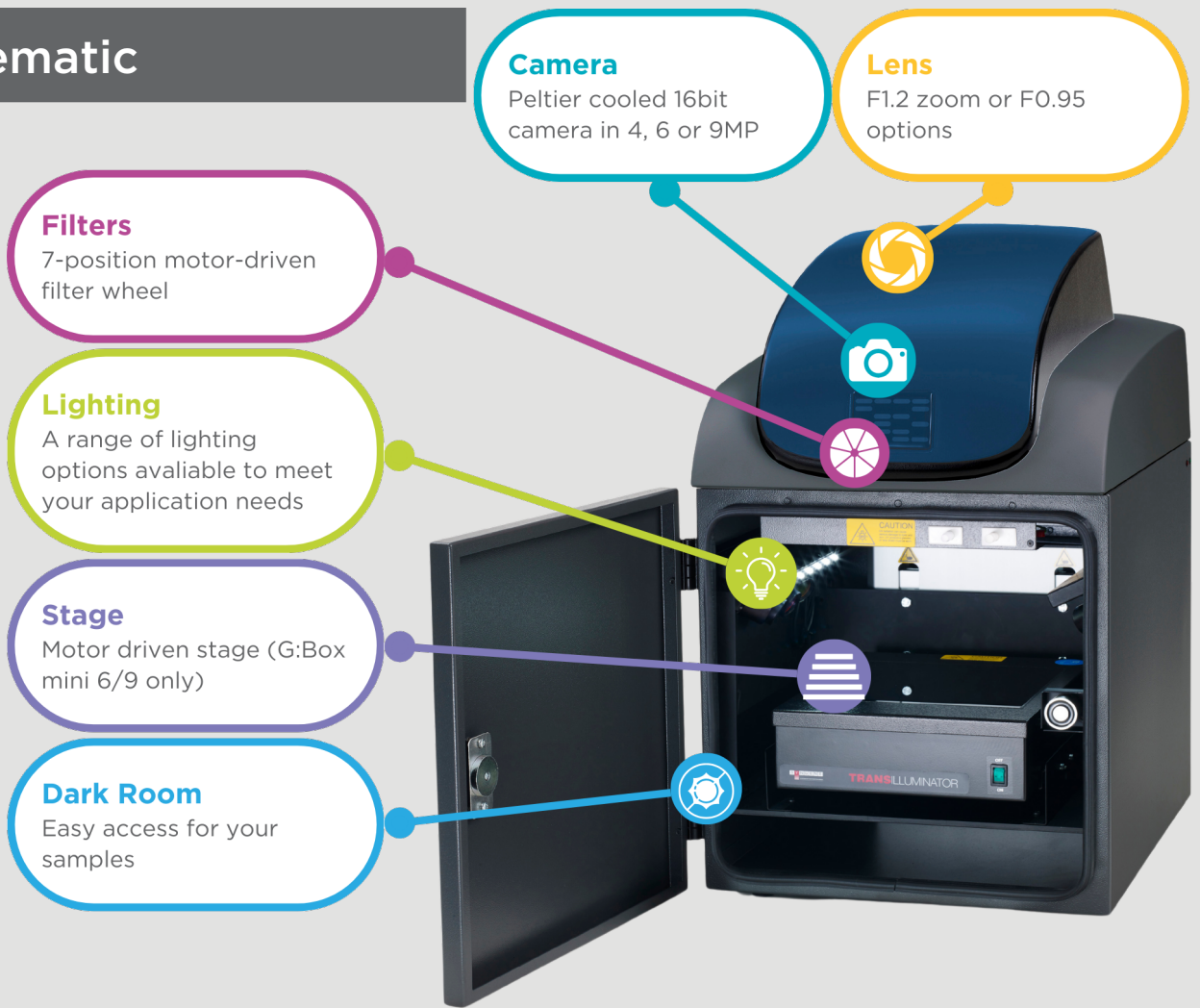
Ideal for multi-user labs. Image more than blots and gels with our HiLED modules provides robust excitation for quantitative fluorescence imaging. Image across the entire spectrum of UV, Blue, Green, Red, Far Red and IR offers true flexibility for all your imaging needs.



### Flexible

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.

## Schematic



## Comparison

			
Systems	<b>G:Box mini XRQ</b>	<b>G:Box mini 6</b>	<b>G:Box mini 9</b>
Image Resolution	4MP	6MP	9MP
Lens	F1.2 zoom lens	F0.95	F0.95
Viewing Area	18x14cm	15x12cm	15x12cm
Stage	No	Motorised driven stage	Motorised driven stage

# Software

## Image Capture Software



GeneSys offers a full spectrum of digital tools to assess, view, and export your images.

Our software features a user-friendly interface, which, along with our intuitive workflow guides, makes capturing an image a breeze. Thus, you can effortlessly acquire publication-quality images.

## Data Analysis Software

Automatic Lane Detection

Band Detection

Background Subtraction

Western Blot Normalisation

MW/BP Calculation

Quantity Calibration

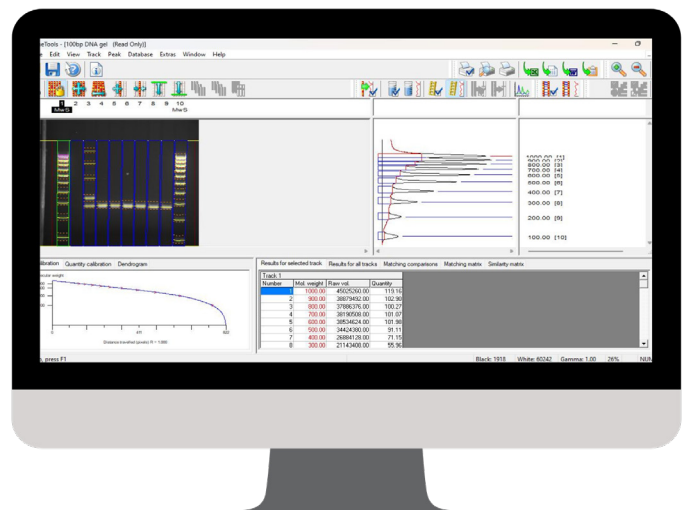
Reports

Spot Blot

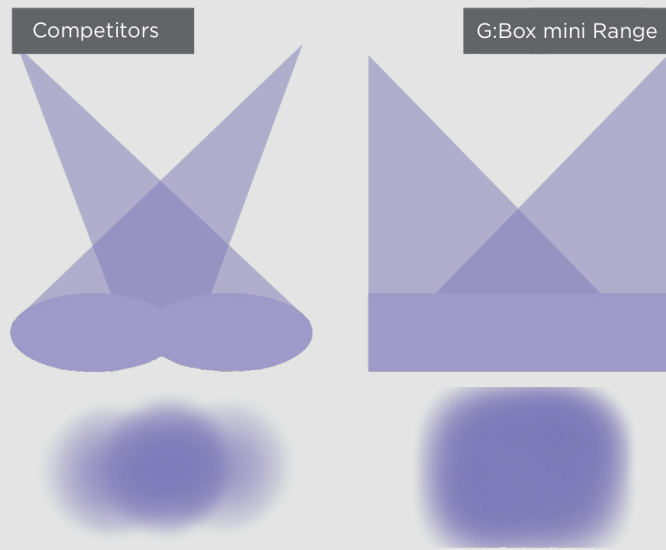
Colony Counting

GeneTools analysis software provides you with the tools to analyse gels, blots, and more. Whether using fully automated or manual modes, complex analysis is made simple.

GeneTools provides flexibility and accuracy for a range of data analyses.



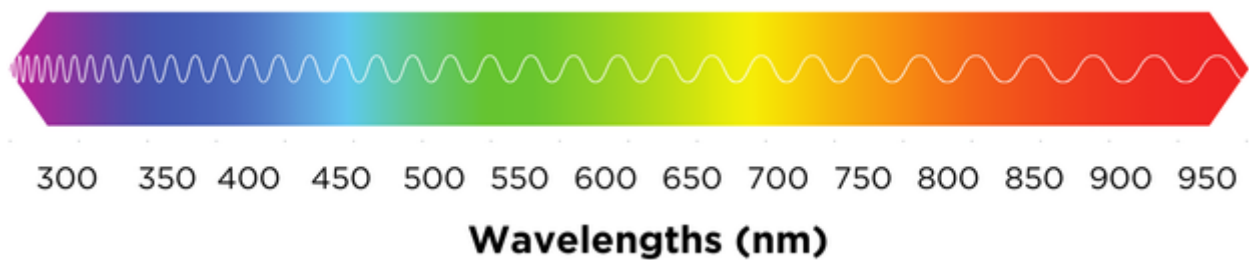
## HiLEDs



The lights are positioned uniformly over a 15x12cm or 18x14 (XRQ only) viewing area, perfect for quantifying and creating accurate images.

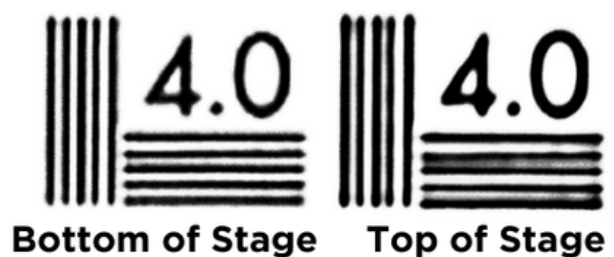
HiLED modules offer superior imaging performance for all fluorescence applications. They are available in various wavelengths, from long-wave UV to IR. Up to four HiLED modules can be installed in the G:Box mini.

Each HiLED module is meticulously designed with a narrow bandpass filter, a crucial feature that significantly reduces cross-talk between different wavelengths. This precision design is especially beneficial when multiplexing with fluorescent gels or blots, as it ensures lower backgrounds and an improved signal-to-noise ratio (SNR), enabling the detection of even the weakest signals with high accuracy.



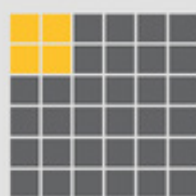
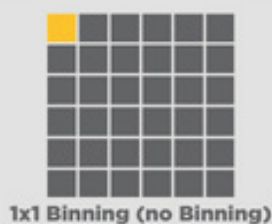
## Hassle-Free Alignment, Focus and Zoom

All of the G:Box mini ranges have epi white LED lights as standard for easy sample alignment. The test chart used is a four-line-pair mm pattern from a resolution chart (Applied Image Inc). Images clearly show separated lines in both the lower and upper stage positions, which allows for the clear distinction of close bands.

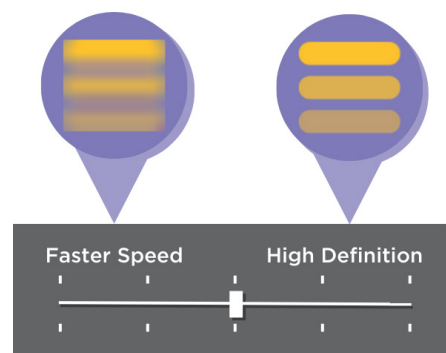


The G:Box mini range lets you capture high-resolution images and easily distinguish close bands on both gel and blots. Experience the precision of the GeneSys lens controls paired with high-resolution cameras (4, 6 and 9MP). The G:Box mini 6 and 9 systems feature a fixed lens and moveable stage that tracks focus as it moves, ensuring your samples are always sharp.

## Optimise Exposure to Target Weak Signals



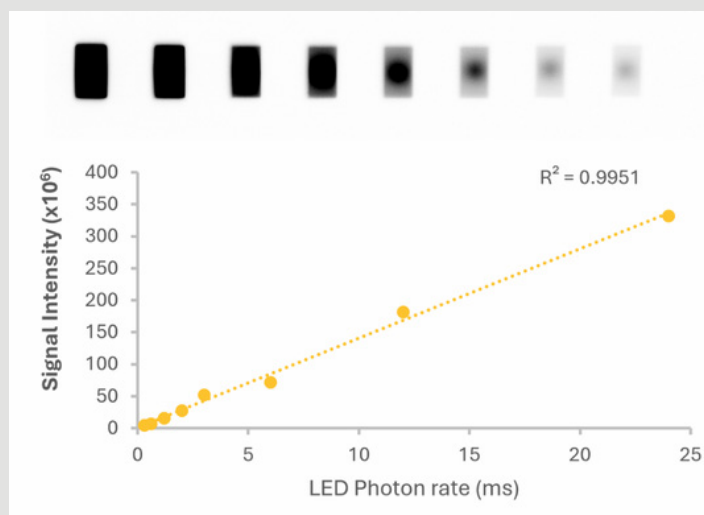
Are you finding it difficult to detect weaker signals above the background? GeneSys image capture software lets the user define an auto-expose area for the optimal detection of your bands of interest. It does this by using the CCD camera to combine multiple pixels into a larger pixel (super pixel) to collect more light, known as binning. An unbinned image using the camera's full resolution during image capture when you bin 2x2 means that the areas of four adjacent pixels are combined into one larger pixel. G:Box mini systems can have six different types of binning options, providing users various options based on application needs. On-chip binning enables significant increases in signal without increasing noise for highly sensitive detection.



The G:Box mini systems boast a broad dynamic range, ensuring the accurate quantification of proteins over several orders of magnitude. This precision gives you the confidence in your results.

## High-Performance Sensitive Chemiluminescence Imaging

The G:Box mini range delivers high-resolution, publication-quality imaging with full flexibility to control imaging and exposure time, as well as detect visible or colour markers. With various acquisition modes, including rapid, automatic, and manual image capture, and advanced features for optimising sensitivity, capturing a chemiluminescence Western blot has never been easier.



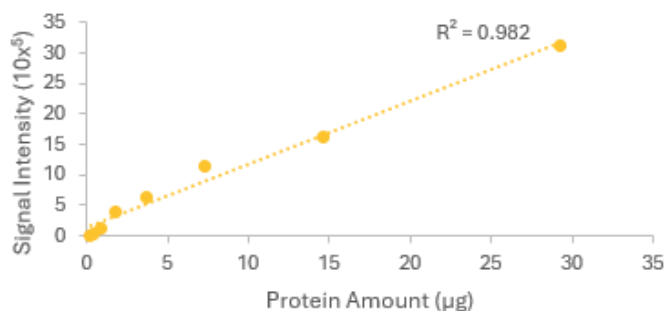
### Wide Dynamic Range

G:Box mini imagers exhibit excellent linear dynamic range. In this example, imaging of a calibrated luminescence device which emits light power in the range of 24-0.3 photon rate ms.  $R^2$  value of 0.99.

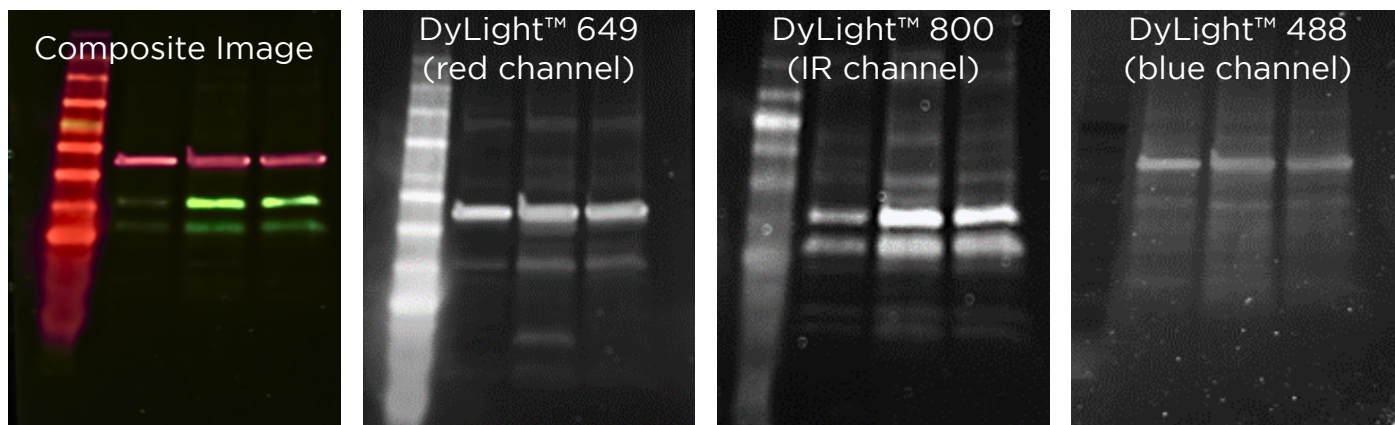
# Streamline your Research with Multiplex Fluorescence

With high-resolution sensitive CCD cameras providing an increased signal-to-noise ratio, leading to low backgrounds for fluorescence imaging, the G:Box mini range enables quantitative Western blotting and much more.

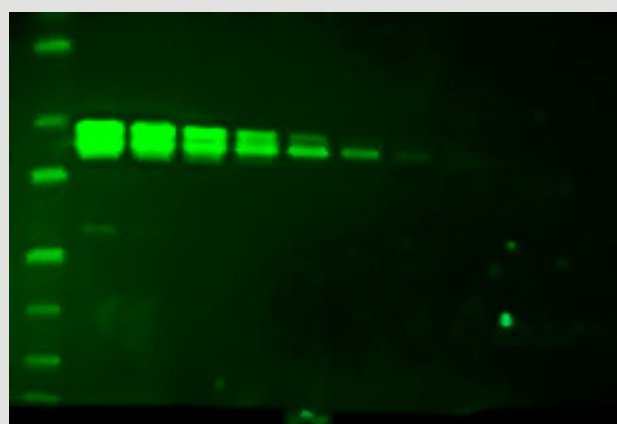
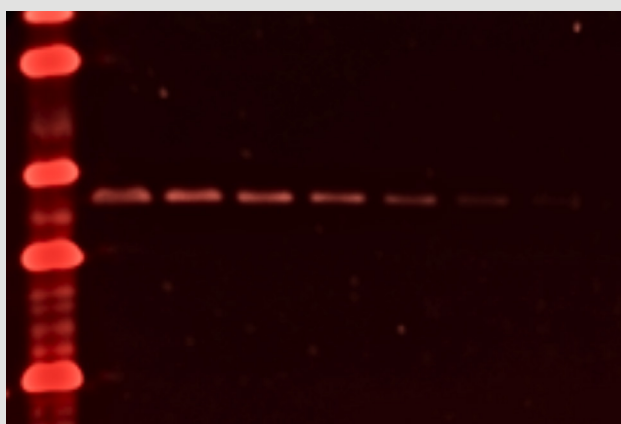
Fluorescent multiplexing helps to make research more efficient and productive, allowing researchers to easily detect several proteins sequentially or different proteins of a similar size. Up to four fluorescence channels can multiplex up to four fluorophores that emit light in from the visible upto infra-red ranges.



ERK p44 was detected in a serial dilution of HeLa cell lysate (29.2-0.22µg) using the IRDye 800 secondary antibody. Imaging of IRDye 800 showed good linearity with an R2 value of 0.98. Ensure confidence in quantification with the G:Box mini range.



**3-colour western blot**  
Images captured using G:Box mini 9



## 2-colour western blot

Images captured using G:Box mini 9 system. B-Actin was detected in serial dilution (29.2-0.2µg) using IRDye® secondary antibody. ERK p44 was detected in serial dilution of HeLa cell lysate (29.2-0.22µg) using IRDye 800® secondary antibody. The imaging conditions used were the red HILED module, filt705M, IR HILED module and filtLY800.

## Lens and CCD Sensor

G:Box mini systems come equipped with a 4, 6 or 9mp CCD camera, ideal for imaging applications with long exposure times, such as chemiluminescence or weak signals from fluorescence samples. Peltier cooling the CCD camera achieves lower background noise, ensuring the dark noise is kept to a minimum when capturing images with a long exposure time.

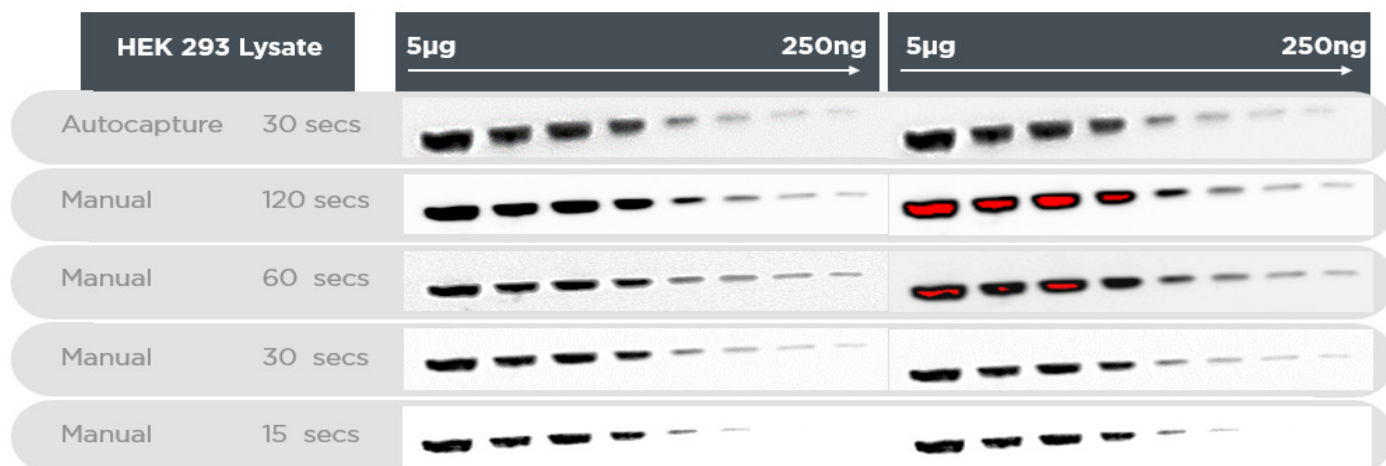
The F0.95 lens (6 or 9 model) or F1.2 (XRQ model) combines sensitivity and optical performance for very low-light conditions such as chemiluminescence. A wide aperture permits more light to enter the camera sensor, reducing exposure times and enabling the lowest detection levels.



## Automated Capture

Autocapture mode removes the guesswork. Select the dye or stain you are using, and GeneSys will configure the system to have the best lighting and filter available.

Rapidly determine the optimal exposure time and reduce the risk of overexposing or underexposing by maximising pixel intensity while avoiding saturation, ensuring images are fully quantifiable.



### Comparison of Autocapture and Manual Capture

The same blot was imaged using the GeneSys software's Autocapture feature and four manually set exposure times. On the right, there are images captured with the saturation feature turned on; saturated pixels are highlighted in red.

## Service Contracts

When you buy a Syngene imaging system, you'll benefit from our service contract options, designed to support your G:Box mini after your 3 years standard warranty period. Our service team includes experts providing advice, methodology development, and training. We offer two contract options, Silver and Gold, all carried out by our dedicated specialists.

	Silver Package	Gold Package
<b>Length of Contract</b>	1 YEAR	1 YEAR
<b>Onsite Visit</b>	YES	YES
<b>Cost of Labour</b>	YES	YES
<b>Spare Parts Covered</b>	NO	YES
<b>Preventative Maintenance</b>	YES	YES
<b>Online Training</b>	NO	YES

## Regulation & Compliance

Rest assured that your instrument complies with specifications and regulatory standards with our IQOQPQ documentation.

The G:Box mini range image capture and analysis software are designed to support laboratories' 21CFR Part 11 requirements. Compliance components of GeneSys and GeneTools include:

	GeneSys	GeneTools
Secure Windows-Based User Login	YES	NO
Use Groups with Different Roles	NO	YES
Electronic Signatures	YES	YES
Electronic Records	YES	YES

## Support

At Syngene we are fully dedicated to providing you with exceptional support throughout the lifespan of your G:Box.

Our team offers comprehensive in-house support including FAQs, guides, and assistance from our devoted professionals.

## Ordering Information

### Systems

G:Box mini XRQ

**GBOX-MINI-XRQ**

G:Box mini 6

**GBOX-MINI-6**

G:Box mini 9

**GBOX-MINI-9**

### Accessories

Transiluminator

**GE-2020M**

Visible Light Converter Screen

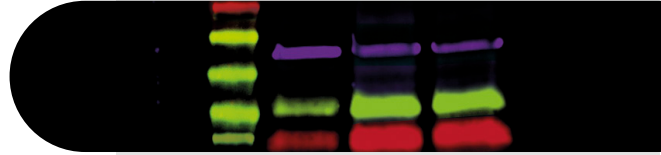
**GE-CONVERT5**

Blue Converter Screen

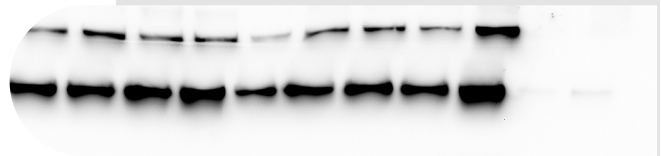
**CONVERTBLUE-2126**

## Applications

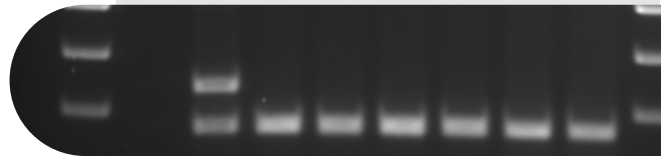
### Fluorescence Multiplex Image



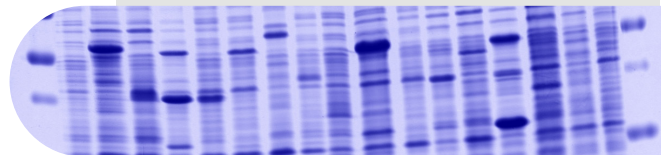
### Chemi Western Blot



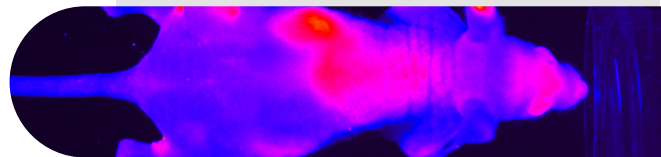
### DNA Gel



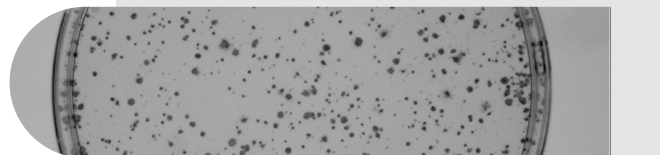
### Coomsie Blue Protein Gel



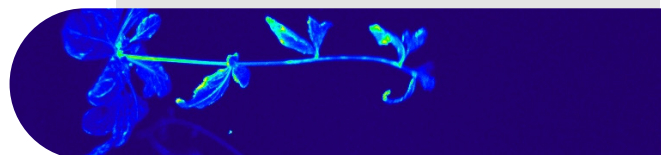
### Animal Imaging



### Colony Counting



### Plant Imaging





# WolfLabs

**Pricing on any accessories shown can be found by keying the part number into the search box on our website.**

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct. If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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Please contact us if this literature doesn't answer all your questions.