cSeries Imaging Systems

SUPERIOR PERFORMANCE THROUGH INNOVATIVE DESIGN

c600 | c500 | c400 | c300
Big performance, small footprint, incomparable value

Great science starts with high-quality data, and when it comes to imaging gels, blots, plates, and even intact tissues and small animal models, high-quality data starts with the cSeries.

Leveraging Azure Biosystems’s deep expertise in imaging system engineering, the cSeries delivers best-in-class sensitivity, dynamic range, and signal-to-noise ratio in an easy-to-use, compact instrument.

• Get high-quality data from an expertly-engineered system
• Perform a wide range of imaging applications with a single, versatile instrument
• Choose a system for today’s needs and upgrade as your detection methodologies change
• Seamlessly integrate the cSeries into your studies with easy-to-use image acquisition and analysis workflows
• Save space with our compact design
• Rest easy with a dedicated team ready to answer questions, troubleshoot, and provide on-site support
See How We Deliver High-Quality, Multimodal Imaging

**RGB LEDs**
Colored LEDs provide robust excitation for quantitative visible fluorescence imaging, with excitation at 460, 526, and 628 nm for Cy2/Cy3/Cy5 or similar dyes.

**LASERS AT 660 NM AND 785 NM**
With a narrower excitation band than LEDs or white light sources, you get NIR imaging with better sensitivity and lower background.

**EPI BLUE LED AT 470 NM**
Image blue-excited DNA dyes like SYBR® Safe, a feature available on all cSeries models.

**EPI WHITE LIGHTS**
Uniform overhead illumination for white light imaging.

**TRANS WHITE IMAGING**
Image visible/white light dyes, such as Coomassie Blue, in gels or other translucent samples.

**DUAL-WAVELENGTH UV AT 302 NM AND 365 NM**
Image DNA gels and more with a UV light source compatible with a wide range of dyes, including ethidium bromide, SYBR® green, SYBR® gold, SYPRO® orange, fluorescein, RadiantRed®, TexasRed®, and SYPRO Red.

**TOUCH-SCREEN CONTROLS**
Easily manage data acquisition and analysis with the touch of a finger, driven by Windows OS.

**HIGH RESOLUTION CAMERA**
Capture fine details of your sample.

**DEEP PELTIER COOLING**
Experience excellent image quality and reduced noise with low temperature camera cooling (-50°C).

**DUAL-FOCUS TECHNOLOGY**
Get perfectly-focused images and optimal lane settings without having to touch the camera.

**7-POSITION FILTER WHEEL**
Perform a wide range of applications with a motorized, multi-position filter wheel.

**CHEMI BLOT SHELF**
Get better sensitivity by placing chemiluminescent blots closer to the detector. The adjustable shelf can be stored in the door when not in use.

**3 USB PORTS**
Connect to a drive, a network, or attach a thermal printer.

**SAFETY INTERLOCK**
The system includes a safety interlock to prevent accidental UV exposure.

**LARGE FOV**
Image large gels or blots, multiple gels or blots, or even tissues, plates, and small animal models.

Choose Your System

- **c600** The All-around Application Ace
- **c500** The Ultimate IR Imaging System
- **c400** The Visible Fluorescence Virtuoso
- **c300** The Darkroom Eliminator

Upgradable to c600, c400, and c600

**cSeries Excitation Wavelengths**

- 302 nm
- 365 nm
- 460 nm
- 470 nm
- 526 nm
- 628 nm
- 660 nm
- 680 nm
- 785 nm

**cSeries Excitation Wavelengths**
Dig Deeper: Visible Fluorescence Imaging

With high resolution, high sensitivity, and low background fluorescence imaging, the cSeries enables quantitative Western blotting and a whole lot more. Choose the c400 for visible fluorescence, the c500 for NIR fluorescence, or the c600 for both visible and NIR fluorescence.

MULTIPLEX DETECTION

No need to strip and reprobe your blot or run multiple gels—conserve sample, time, and reagents. Simultaneously image up to three proteins when you have the flexibility of two NIR channels (at 660 and 785 nm) and three visible channels (at 460, 526, and 628 nm; Figure 1).

Easily resolve and quantify co-migrating bands, such as phosphorylated versus non-phosphorylated protein forms (Figure 2).

The system is fast and easy to use. I load the membrane on the tray and choose my imaging method with the touch of a button. I especially like how it records multiple cumulative images, so I never need to re-expose the membrane. — Rukmmur | Scientist | Biotech Company

DESIGNED TO DELIVER

NIR lasers keep signal high and background low

Our high-performance NIR lasers deliver robust excitation energy which maximizes emission strength for optimal sensitivity.

In addition, because lasers deliver an inherently narrower excitation band than LEDs—lasers emit a coherent, collimated beam of light—they avoid the overlap in excitation and emission signals that can occur with LED light sources. This results in ultra-low background signal, enabling faster, more sensitive NIR fluorescence detection.
Dig Deeper: Visible Fluorescence Imaging (continued)

**WIDEST DYNAMIC RANGE**

Through a combination of 16-bit imaging and low background noise (Figure 4), the cSeries offers the widest dynamic range of any comparable CCD-based imaging system on the market. Efficiently acquire more data in a single experiment for faster workflows.

**ROBUST QUANTITATION**

Get sensitive, quantitative NIR detection that’s faster than a competitor’s system (Figure 3).

**BEYOND THE BLOT**

What truly sets the cSeries apart from other comparable systems is the ability to image more than just blots. Sure, in-gel fluorescence (Figure 5) and media plates (Figure 6) are not much of a stretch, but it’s the cSeries’ unmatched depth-of-field that enables imaging more three-dimensional samples such as mice (Figure 7) and zebrafish (Figure 8).

**Figure 3.** (a) Two color Western blot imaged with IR 700 and IR 800. (b) Azure performs equal to a competitor’s laser scanner system, 7.5-times faster. A serial dilution of IR 700 antibody shows that the limit of detection is the same.

**Figure 4.** Comparison of the signal-to-noise ratio from blots analyzed with the cSeries and a competitor show that across the range of protein concentrations, the cSeries consistently delivers superior signal-to-noise ratios.

**Figure 5.** Fluorescent protein native gel.

**Figure 6.** GFP- and mCherry-expressing E. coli.

**Figure 7.** Mouse with RFP-labeled subcutaneous tumor.

**Figure 8.** GFP-expressing zebrafish.

**DESIGNED TO DELIVER**

RGB LEDs maximize flexibility and value.

The cSeries’s full-color RGB LEDs expand your imaging capabilities from NIR to visible fluorescence wavelengths, increasing flexibility and expanding multiplexing options while keeping system-size compact and value high.

If you need even more performance, take a look at our Sapphire™ Biomolecular Imager, which is an all laser imaging system—visit azurebiosystems.com/sapphire to learn more.
Dig Deeper: Chemiluminescent Imaging

Just as sensitive as film, but easier and more quantitative, our cSeries imaging systems will revolutionize your chemiluminescent workflows and virtually eliminate your darkroom.

THE SAME SENSITIVITY AS FILM...

Using high resolution, F 0.95 fast lens technology, you can capture images with the same sensitivity as film (Figure 9a).

...WHILE MORE QUANTITATIVE

The broad dynamic range of cSeries instruments results in the ability to accurately quantify proteins over several orders of magnitude (Figure 9b).

CLEARLY SEE OUR CAPABILITIES

At Azure Biosystems, we believe that potential customers should know exactly how well an instrument will perform before making a purchasing decision, which is why we are proud to show real-world quantitative data with each experiment’s limit of detection (LOD) clearly shown (see Figures 3 and 9). Of course, LODs are subject to your experimental setup and may be lower than these examples, so be sure to arrange an instrument demo to see how well the cSeries works for your studies.

BUY WITH CONFIDENCE

We offer full customer support before and after your purchase, whether you have questions about the instrument or a new experimental approach, such as transitioning from chemiluminescence to visible fluorescence or in-depth training on our AzureSpot software. This includes one-on-one consultations with our sales reps and even on-site workshops—all you have to do is ask!

In addition, our instruments are backed by a one-year warranty, with extended warranty and service packages also available for purchase.

DESIGNED TO DELIVER

Direct detection maximizes sensitivity

With a very short and direct path from the sample to the detector—no bends—no mirrors, the cSeries maximizes light-collection for reliably sensitive imaging.

In addition, the increased sensitivity reduces the need for binning during chemiluminescence imaging, enabling acquisition of images that are both high resolution and high sensitivity.

One person in the lab was resistant to switching to digital imaging at first, but has since come around because of the convenience, ease of use, and images that are equal to or better than film.

Ann | Senior Research Technologist
Academic Research Institution
BINNING: OPTIMIZE SENSITIVITY AND RESOLUTION

With a CCD camera, you can combine multiple pixels into a single larger pixel or “super pixel,” to collect more light, a technique known as binning. An unbinned image (also known as a “1X1”), uses the full resolution of the camera during image capture. A binning of 2X2 means that the areas of 4 adjacent pixels are combined into one larger pixel, and so on. On-chip binning enables significant increases in signal without increasing noise, for highly sensitive detection.

Providing tools to analyze gels, blots, and more, AzureSpot software makes complex analysis a simple process. Designed to be either fully automated or manual, AzureSpot provides flexibility and accuracy for data analysis.

- Automatic lane creation
- Band detection
- Background subtraction
- Molecular size/pI calibration
- Quantity calibration
- Colony counting
- Array analysis (for 96-well plates and microarrays)
- Annotation for comments and highlighting the image

Figure 10. The cSeries’s high resolution and flexible binning capabilities—up to 5 levels of binning—ensures optimal image acquisition for chemiluminescent Western imaging.

DESIGNED TO DELIVER

Reagents optimized for quantitation

CHEMILUMINESCENCE

All reagents are not created equal. Azure’s Radiance chemiluminescent Western blot substrate is clearly better optimized for quantitation than the alternatives, with high sensitivity and a wider linear range than other chemiluminescent reagents. We also offer Radiance PLUS for applications where you need even greater sensitivity.

- Goat-anti-rabbit
- Goat-anti-mouse
- Goat-anti-human
- Goat-anti-chicken
- Goat-anti-rat
- Goat-anti-guinea pig
- Donkey-anti-goat

FLUORESCENCE

We also offer fluorescently-labeled secondary antibodies that deliver unparalleled sensitivity and performance for immunoblotting applications when used in conjunction with Azure’s Western blotting systems. Choose from AzureSpectra 550-, 650-, 700- and 800-labeled antibodies in the following formats:

- Goat-anti-rabbit
- Goat-anti-mouse
- Goat-anti-human
- Goat-anti-chicken
- Goat-anti-rat
- Goat-anti-guinea pig
- Donkey-anti-goat
A SNAPSHOT OF COMPATIBLE DYES*  

- Alexa Fluor® 488  
- Alexa Fluor® 546  
- Alexa Fluor® 555  
- Alexa Fluor® 633  
- Alexa Fluor® 647  
- Alexa Fluor® 680  
- Chemiluminescence  
- Coomassie Blue  
- Coomassie Fluor™  
- Orange  
- Cy®2  
- Cy®3  
- Cy®5  
- Deep Purple™  
- DyLight™ 488  
- DyLight™ 550  
- DyLight™ 633  
- DyLight™ 650  
- DyLight™ 680  
- DyLight™ 750  
- DyLight™ 800  
- ECL, Plex™  
- Ethidium Bromide

*Other dye colors are possible. Compatible dyes depend on your system configuration.

Space-saving Design

Footprint of competitor’s instrument

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HIGHLIGHTED APPLICATION NOTES

Visit azurebiosystems.com/learn/application-notes for a complete listing of application notes.

- Imaging Viral Load in Chicken Embryos
- Imaging In-Gel Fluorescence and Stain-Free™ Gels with the Azure c600
- Western blot Normalization
- DNA Dye Detection Limits using Azure cSeries imagers
- Wet or Dry? Which Type of Transfer Is Best for Your Protein