

Specifications and Applications

Image Capturing Unit (Camera Head and Controller)	
CCD chip	Fujifilm Super CCD Area Type chip
Number of Pixels	3.2 M pixels
Pixel Size	10.75 x 10.75µm
Cooling	Two-stage thermoelectric module with air circulation
Cooling Temperature	-30°C (when room is below 28°C)
Focusing	Power focusing; remote and preset control
Exposure time	1/100 second to 30 hrs (2 hrs to 30 hrs to be set manually)
Dynamic range	4 orders of magnitude
Gradation	16 bits (65,536)
Image size:	12.6MB Max.; 49.2KB Min.
Maximum sample size	25 x 25cm (wide angle lens); 14 x 21cm (Fujinon VRF43LMD lens)
Binning	1x2, 2x4, 4x8, and 8x16 pixels
Interface	USB1.1

Software	
Image capture	Fujifilm Image Reader (Mac™ and Windows®)
Image analysis	Fujifilm Image Gauge (Mac™); Fujifilm MultiGauge (Windows®)

Dimensions and Weights	
Camera head	180 (W) x 170 (H) x 250mm (D) 3.4kg
Dark Box IV	510 (W) x 730 (H) x 480mm (D) 49.0kg

Analyzing Unit	
Operating system	Windows® XP or Mac™ OS 9 & X (Mac™ OS X to follow)

Applicable Reagents and/or Samples	
Chemiluminescence	CDP-Star®, ECL™, ECLplus™, SuperSignal, ImmunoStar, CSPD®
Fluorescence	EtBr (W/UV light), SYBR® Green I & II, SYPRO® Orange, GFP
Chemifluorescence	*AttoPhos™
Documentation	CBB stained gel (Trans-illuminator) NBT/BCIP stained membrane (Epi-illuminator)

Intelligent Dark Box IV	
EPI-illuminator for fluorescence	Blue LED (470nm)
EPI-illuminator for documentation	White-light source
Transilluminator – for documentation of stained gels and autoradiographic films	White LED
UV Transilluminator**	UV-light source(312nm)
Filter turret	Five positions

Printers	
Picrography 3500	
LBP or Inkjet printer	

Lens	
High sensitivity lens (FUJINON VRF43LMD)	Wide Angle lens (Nikkor 24mm F2)
F-number: 0.85	F-number: 2.0
Focal length: 43mm	Focal length: 24mm
Focus: Remote power focusing	Focus: Manual
Mount: Bayonet	Mount: Adapter to Nikon F

*No license is granted for use of AttoPhos™ to detect nucleic acid on a nylon membrane.
**No license is granted for pre-labeling method with the UV transilluminator.

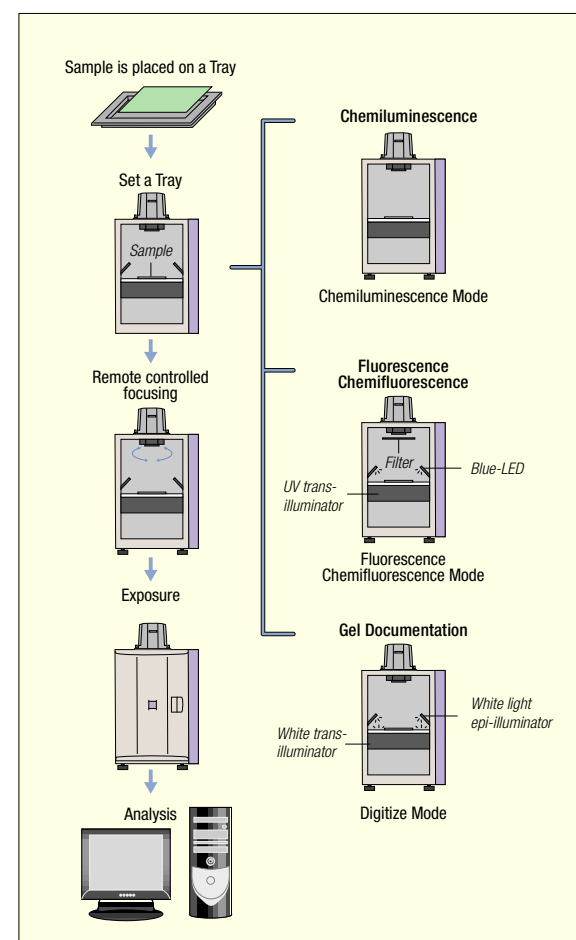


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The binning mode of the LAS-3000 allows researchers to select from four binning settings to enhance both imaging sensitivity and image resolution.

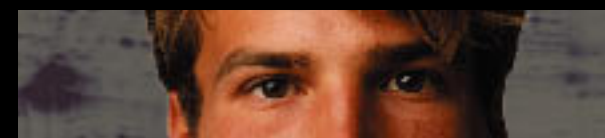


The simplified image analysis process captures images in three modes: chemiluminescence, fluorescence/chemifluorescence and gel documentation.



Science Imaging Systems

Super CCD
Remote Controlled
Science Imaging
System



LAS-3000

CHEMILUMINESCENCE • FLUORESCENCE / CHEMIFLUORESCENCE • GEL DOCUMENTATION

Ref. No. BB-204E (02/09)

Luminescent image analyzer (LAS) for CCD imaging applications requiring high sensitivity



Fujifilm Super CCD Area Type imaging chip

The LAS-3000 imaging system combines new CCD camera technology with a simplified user interface to provide significantly improved system sensitivity with a wide range of modularities. Fujifilm's new Super CCD imaging chip, binning mode and a highly sensitive camera lens allows researchers to capture faint-light images of membrane, gel or film samples with unprecedented sensitivity and resolution.

Improved image sensitivity and resolution

New Super CCD Area Type Imaging Chip - The higher sensitivity of Fujifilm's new CCD provides improved faint-light image capture with outstanding image clarity. The new chip contains 3.2M pixels of which 3.15M contribute to actual imaging. The increased pixel size results from the use of octagonal-shaped photodiodes, which capture a great deal of light. The superior image sensing capability of the new chip results in ultra-high resolution image files of up to 6.3M pixels (3,072 x 2,048 pixels).

New Binning Mode - The LAS-3000 features a new binning mode, which allows users to effectively increase the pixel size and, therefore, the imaging sensitivity of the system. Additionally, the process significantly enhances the signal-to-noise ratio. The system allows four binning settings: 1x2 (standard), 2x4 (high), 4x8 (super) and 8x16 (ultra). Images obtained in the binning mode are further enhanced by software-based pixel supplement to compensate for any loss in resolution.

New Filter Options - A 5-position filter turret is mounted in front of the lens, which allows convenient, electrically controlled filter selection in less than ten seconds. With Image Reader Lite software, the user has control over three standard filters (605DF40 for EtBr, Y515 for SYBR® Green and 510DF10 for GFP), a fourth filter position for chemiluminescence and a fifth user-specified filter for fluorescence. With Image Reader Pro software, the user has full control over five filter types and positions.



FUJINON lens VRF43LMD and 5-position filter turret.

Additional Light Sources - The number of light sources on the LAS-3000 system has been increased to four, including UV transilluminator, white transilluminator, blue epi-illuminator and white epi-illuminator.

Exposure Options - The extremely fast, electronically cooled, high-resolution camera component allows long exposure times in any laboratory setting. Exposures can be set from 1/100th of a second to 30 hours to meet a wide range of imaging conditions. The 30-hours exposure function allows overnight exposures on very dark images.

Convenient, versatile imaging

Simplified User Interface - The system functions of the LAS-3000 are controlled remotely through either a Mac™ or Windows® software application via a standard USB interface. Image capture and analysis software is provided. The newly simplified user interface allows researchers to spend more time in research and less time in system integration and maintenance.

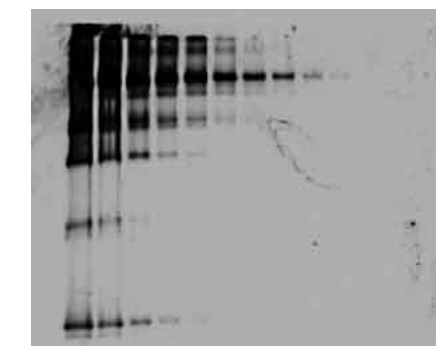
Light-tight operation - The light-tight dark box affords highly sensitive imaging from a variety of light sources in an ordinary lab. After placing the sample tray in

the dark box and closing the light-tight door, all imaging functions are controlled remotely from the PC. With the keyboard and monitor, the researcher conveniently adjusts focus, selects the appropriate filter and sets the exposure to capture the image.

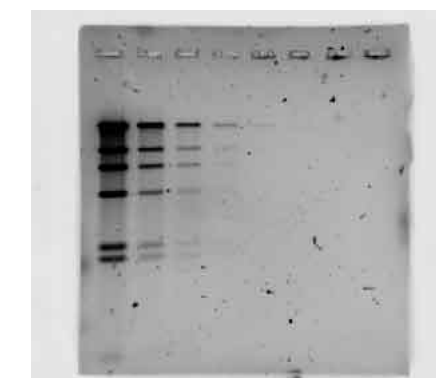
Sampling Convenience - The LAS-3000 accommodates samples up to 25 x 25cm in size with an optional wide-angle lens. The system includes an EPI Tray III for chemiluminescence and epi-illuminator, a DIA Tray III for UV or white transilluminator such as CBB stained gel, and a non-parallax (NP) Tray for up to two titer plates. The NP tray includes a Fresnel lens located



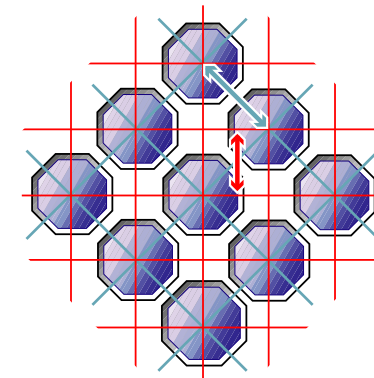
NP Tray



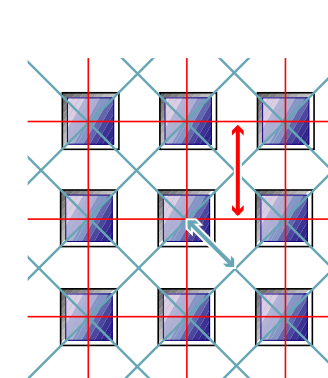
Chemiluminescent Western Blot using ECL™
Sample: Dilution series of mouse IgG
Binning mode: High Resolution; Exposure time: 30 sec



Fluorescent gel electrophoresis with SYBR® Green I
Sample: Agarose gel electrophoresis of diluted series of λDNA/HindIII
Light source: Blue LED epi-illuminator; Filter: Y515-DI
Binning mode: High Resolution; Exposure time: 20 sec



Super CCD - By rotating pixels 45 degrees to form an interwoven layout, the Super CCD's pixel pitch in the horizontal and vertical directions is narrower than in the diagonal direction, achieving higher horizontal and vertical resolution.



Conventional CCD - With conventional interline CCDs, pixel pitch in the diagonal direction is narrower than in the horizontal and vertical directions, resulting in higher diagonal resolution.