

Highest Image Quality

Maximum-Performance



Science Imaging

System

BAS-5000

Autoradiography is still the best option.

Every day there seems to be a new method proclaimed for the quantitation of DNA and proteins from gels, blots and other assay systems. But scientists agree that autoradiography has been demonstrated to be the easiest, fastest and most reproducible approach.

And now even more scientists agree that the best autoradiography results come from Fujifilm Bio-Imaging Analyzer Systems (BAS) with the patented Fujifilm Imaging Plate (IP).

Unequaled fine-structure imaging performance

## The BAS-5000 Image Analysis System

The BAS-5000 offers the highest image quality of any phosphor imaging system. It uses Fujifilm's unique confocal laser and light-collecting optics. The BAS-5000 is amenable to fine-structure studies of a wide variety of tissue samples. With a dynamic range up to five orders of magnitude and a pixel size as small as 25  $\mu\text{m}$ , images captured with Fujifilm IPs and the BAS-5000 are superior to X-ray film autoradiograms. The BAS-5000 delivers superior sensitivity, accuracy, and rapid scan times; a 20 x 25 cm Imaging Plate may be scanned at 50  $\mu\text{m}$  in as little as five minutes. Making the BAS-5000 not only the most powerful phosphor imaging system when it comes to resolving images, but one of the fastest as well.

The range of recommended applications for the BAS-5000 system includes  
Molecular



Biology (2D electrophoresis, Macro Arrays); Neuroanatomy; Neurophysiology; Pharmacokinetics and Toxicology, (whole body autoradiography and thin layer chromatography); and Physical and Material Structural Analysis, (X-ray crystallography, semiconductor wafer check and non-destructive testing).

## The Phosphor Imaging Plate

The Fujifilm IP is a reusable two-dimensional sensor for the detection and storage of ionizing radiation energy in photostimulable phosphor crystals. Fujifilm IPs are approximately 100 times more sensitive than X-ray film, and have greater quantitative accuracy. When Fujifilm IPs and the BAS-5000 system are used to replace standard X-ray film and processing, results are available from 10 to 100 times faster. And because Fujifilm IPs are more sensitive than X-ray film, they capture information unobtainable using X-ray film autoradiography. All of these advantages can be enjoyed without the need for processing chemicals or a darkroom. And

while other phosphor imaging systems have been introduced over the years, Fujifilm scanners and imaging plates remain the standard by which others are measured.

## Fully Networkable

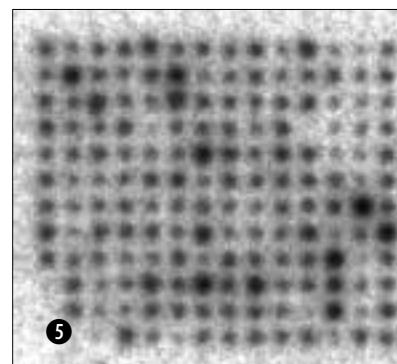
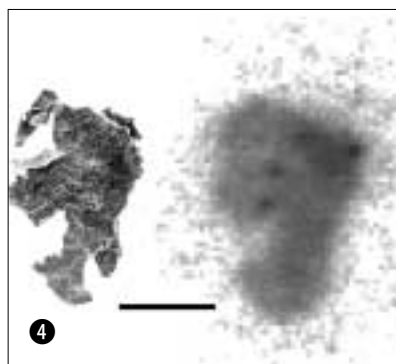
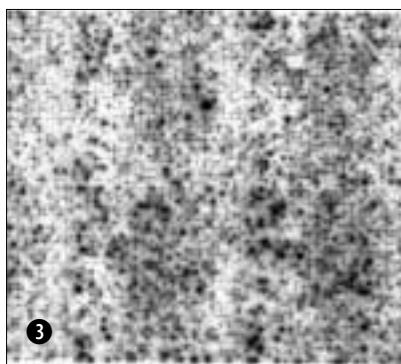
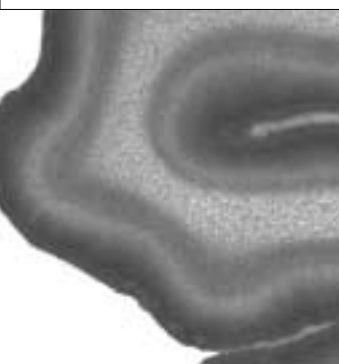
All Fujifilm research imaging systems are easily networked for seamless integration into multi-user laboratory environments. Ask your representative for details.

## ISO 9002 quality

With Fujifilm, you can count on the stringent product quality and safety standards available only for an ISO 9002 certified manufacturer.



Many scientists agree that the BAS-5000 provides the best autoradiography results of any imaging system.



Data Images, left to right:

1. (On monitor) Receptor autoradiography on rat brain with  $^3\text{H}$  labeled CGP exposed on BAS-TR2025 screen. Exposure time: 4 days. Data courtesy of Dr. Manolo Mugnaini and Dr. Bernd Bunnemann, Department of Pharmacology, Medicines Research Center, Glaxo Wellcome S.p.A., Verona, Italy.
2. Serotonin 1A receptor as seen in the human cortex, BA 9 using  $(^3\text{H})$  8-OH-DPAT. Data courtesy of Brian Dean, Division of Molecular Schizophrenia, Mental Health Research Institute, Parkville, Australia.
3. DNA microarray (1.8 x 2.7 cm) on Nylon membrane hybridized with a  $^{32}\text{P}$  labeled complex probe. Data courtesy of Equipe TAGC, Institut de Cancérologie et d'Immunologie de Marseille, (B. Jordan, C. Nguyen, R. Houllatte). Produced and provided by the Konan Peck team, IBMS, Academia Sinica, Taipei.
4. Scanning electron micrograph of particle containing 0.04 Bq  $^{60}\text{Co}$  (left) and its phosphor signal (right). 2-day exposure. Scale bar: 500  $\mu$ . Data courtesy of C. Zeissler, S. A. Wright, and R. M. Linstrom. Detection and Characterization of Radioactive Particles, Appl. Radiat. Isot., Vol. 49, No. 9-11, pp. 1091-1097, 1998.
5. PCR products spotted as a 4 x 5 mm microarray onto a Nylon membrane. Hybridization with a  $^{32}\text{P}$  labeled oligonucleotide. Data courtesy of Equipe TAGC, Institut de Cancérologie et d'Immunologie de Marseille, (B. Jordan, C. Nguyen, R. Houllatte). Produced and provided by the Konan Peck team, IBMS, Academia Sinica, Taipei.

# Specifications and Applications

## Specifications

Imaging	
IP Size	20 x 25 cm (max)
Pixel Size	25/50 μm
Reading Time	5 min. (50μm)
Detection Limit	<sup>32</sup> P 0.11 dpm/mm <sup>2</sup> /hr <sup>14</sup> C 0.90 dpm/mm <sup>2</sup> /hr
Dynamic Range	4/5 orders of magnitude
Gradation	65,536 (16 bits)/256 (8 bits) selectable
Shading	± 5% over entire scan area

### Imaging Plates (see details below)

BAS-MS2025, BAS-SR2025, BAS-TR2025, BAS-ND2025

### Dimensions and Weight

Dimensions	1050 mm (W) x 500 mm (H) x 650 mm (D)
Weight	90 kg

### Image Reading Software

ImageReader (MacOS/Windows® 95, Windows® 98, Windows® NT ver.4.0)

### Image Analysis Software

Science Lab (MacOS/Windows® 95, Windows® 98, Windows® NT ver.4.0)

## Imaging Plates

Size: 2025 (20cm x 25cm)

BAS-MS2025	Designed for compatibility of high sensitivity and water-resistance. For use with all existing BAS.
BAS-SR2025	Designed with blue pigment for both optimum sharpness (especially for 50μm or smaller pixel size) and good wet-sample durability.
BAS-TR2025	Designed for highest resolution tritium detection, with blue pigment and no surface-protection layer. For use with dry samples.
BAS-ND2025	Designed for neutron detection, with blue pigment, surface-protection and Gd <sub>2</sub> O <sub>3</sub> converter in the photostimulable layer. Good wet-sample resistance.

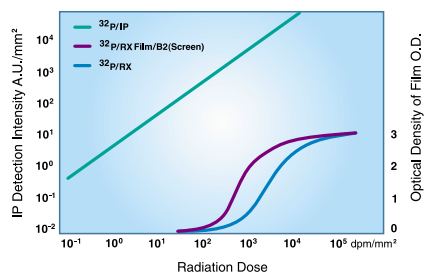
## Applications

Life Science	Genomics and Proteomics Imaging	Molecular Biology	Neuroanatomy	Neurophysiology	Immunology & Cell Biology	Pharmacokinetics & Toxicology	Physical and Material Sciences	Structural Analysis	X-Ray Crystallography	Semiconductor Wafer Check	Non-Destructive Testing	Environmental Monitoring	Autoradiography	Dosimetry
		1D Electrophoresis	●						●	●	●		●	●
		2D Electrophoresis	●							●				
		DNA & Protein Blots	●											
		Macro Arrays	●											
				●										
					●									
						●								
									●					
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● Recommended ● Available

## Imaging Plates vs. X-ray Film

The sensitivity of Fujifilm's patented IP provides a highly efficient, uniform and sensitive detection system far superior to that of X-ray film. All Fujifilm IPs, except BAS-TR (tritium detection) IPs, are reusable and there is no need for a darkroom or development and fixing chemicals. There are Fujifilm IPs for virtually any type of emitter, all with superior accuracy.



A comparison of Fujifilm Imaging Plate versus X-ray film.

Additionally, Fujifilm IP images can be repeatedly scanned before erasing the IP for your next experiment.

