

FUJIFILM

Life Science

LUMINESCENT IMAGE ANALYZER

LAS-4000mini



Chemiluminescence
Fluorescence
Digitizing

An advanced model of our reliable high-sensitivity chemi/bioluminescence detector

The latest addition to the compact LAS series realizes fluorescence detection and digitizing.

By adopting a newly developed camera, the new analyzer offers enhanced performance while retaining the high sensitivity and high resolution of the former model. A wide array of options is available.

In addition to chemi/bioluminescence detection, the analyzer can perform a wide range of fluorescence detection by a blue LED epi-illuminator and UV trans-illuminator as well as digitizing by a white epi-illuminator. Digital imaging dispenses with dark rooms, films and chemicals. A simple multi-imaging system requiring no special expertise is now added to the line-up.

Remote control from a computer

The focus and diaphragm can be directly controlled from a computer. Together with prefocusing achieved by selecting the tray step, it realizes high-speed focusing. The system enables quick and easy setting of parameters and also supports USB2.0 for rapid data transfer.

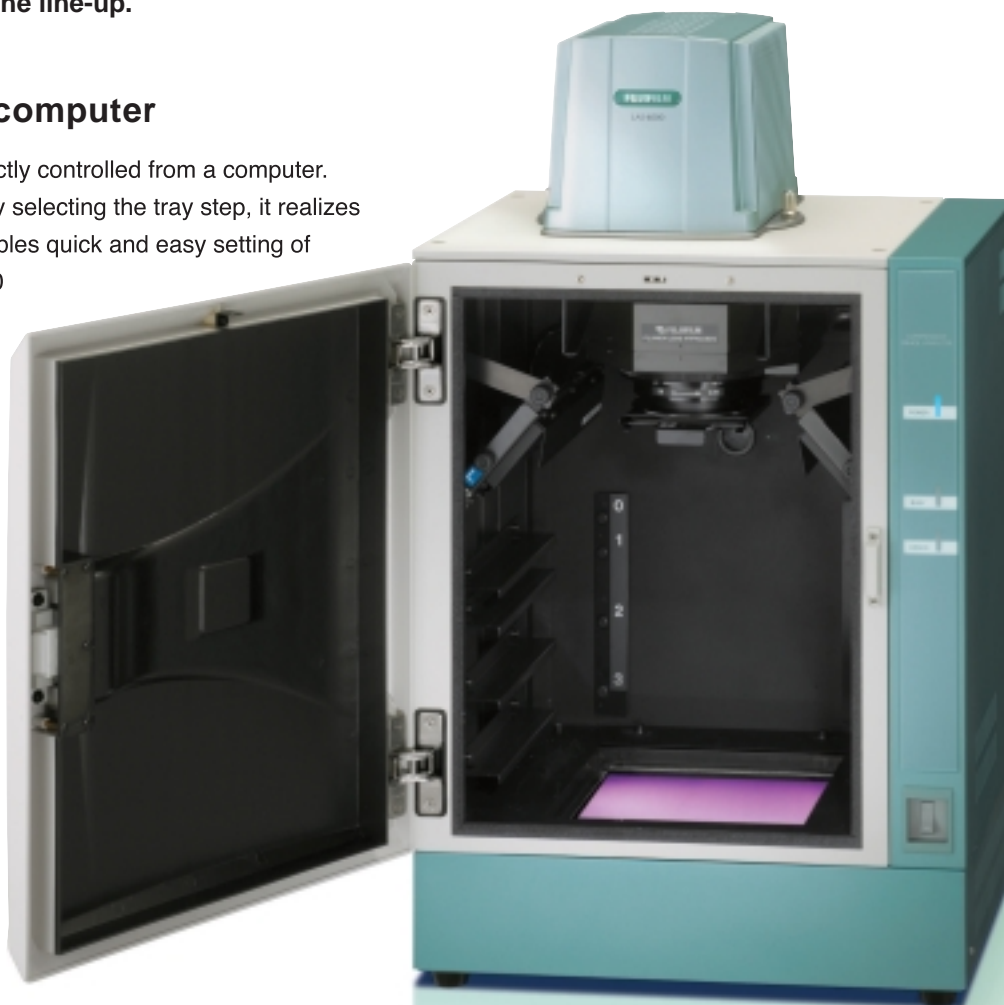
Easy filter exchange

A filter attachment mounted below the lens area enables easy filter changing.



All-in-one compact body

The control box is integrated into the main unit. The compact body can be easily placed on top of a desk.



Large-aperture F0.85 lens

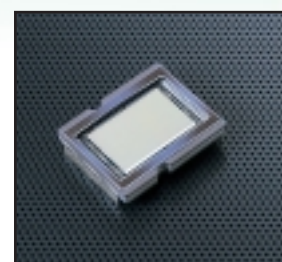
The analyzer incorporates a FUJINON, a strikingly bright lens with an F-number of 0.85. This lens has been especially designed to make full use of the advantages of Fujifilm's proprietary Super CCD chip, and is excellent for capturing images from distances as short as several tens of centimeters. In its design, optical expertise developed through professional applications such as broadcasting TV cameras is fully exploited.



FUJINON LENS VRF43LMD II F0.85

Up to 6.3-megapixel CCD

The same grade of camera and lens as in LAS-4000, the highest-grade model of the LAS series, are used. By limiting the applications to the specific areas of chemiluminescence and bioluminescence, a compact body is made possible while still retaining the high resolution and high performance of LAS-4000. Free from the necessity for dark rooms and chemicals, the analyzer can be placed on the top or side of an ordinary desk, and requires no special expertise for operation.



Super CCD chip

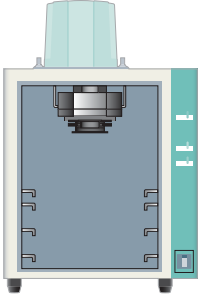
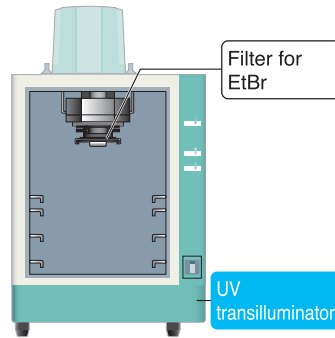
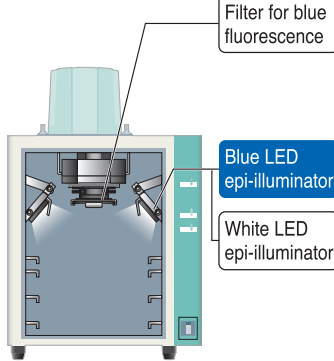
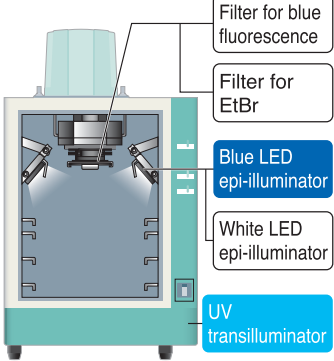
Luminescence Detection

Fluorescence Detection

Digitizing/Colorimetric Detection

Expandable into a multi-imaging system capable of luminescence detection, fluorescence detection and digitizing. A wide array of applicable reagents covers various applications.

Model variations — Examples of optional set combinations and performance capability

BASIC MODEL	WITH UV Illuminator	WITH Light Source (Blue, White)	WITH UV Illuminator & Light Source (Blue, White)
Chemiluminescence/Bioluminescence	Chemiluminescence/Bioluminescence Fluorescence/trans-UV	Chemiluminescence/Bioluminescence Fluorescence/Blue epi-illumination Digitizing/White epi-illumination	Chemiluminescence/Bioluminescence Fluorescence/trans-UV Fluorescence/Blue epi-illumination Digitizing/White epi-illumination
			

Applicable reagents

Chemiluminescence/Bioluminescence

- ECL™
- ECL Advance™
- SuperSignal®
- CSPD®
- Bright-Star™
- ECL Plus™
- Lumi-Light Plus
- CDP-Star®
- Renaissance™
- Luciferase

Fluorescence/Blue epi-illumination

- SYBR® Green I
- SYBR® Gold
- SYPRO® Orange
- FITC
- AttoPhos™
- SYBR® Green II
- SYPRO® Ruby
- SYPRO® Tangerine
- FAM™

*excited by the Blue LED epi-illuminator

Fluorescence/trans-UV

- Ethidium Bromide

*excited by the UV transilluminator

Digitizing/White epi-illumination

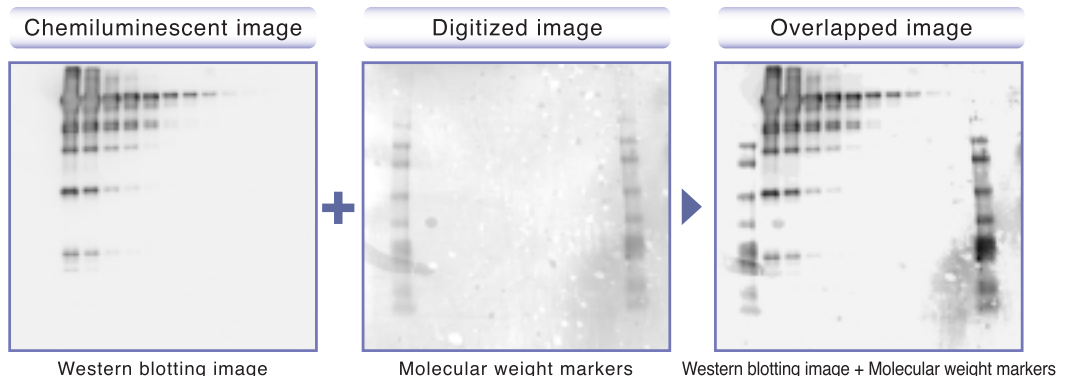
- NBT/BCIP
- Silver Staining
- CBB

*captured by the White LED epi-illuminator

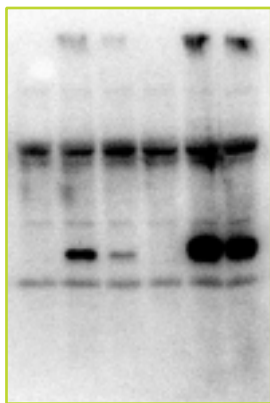
Overlapping of luminescent image and digitized image

LAS-4000mini with Light Source

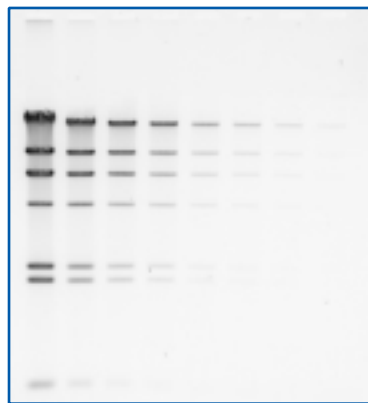
The model equipped with a white LED epi-illuminator and digitizing function comes with software enabling overlapping of the chemiluminescent image and the digitized image for analysis.



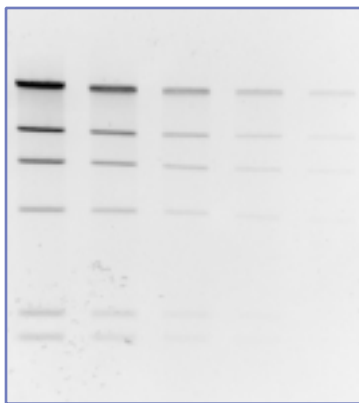
High-quality sample images captured by a high-sensitivity and high-resolution optical system



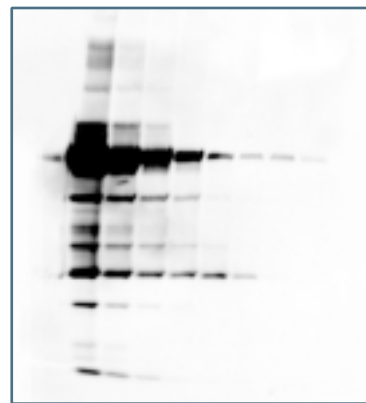
Chemiluminescence method
ECL Plus™
Exposure time : 60sec



Fluorescence method/blue epi-illuminator
SYBR® Green I
Exposure time : 1/2sec



Fluorescence method/trans-UV
Ethidium Bromide
Exposure time : 1/8sec



Chemiluminescence method
ECL
Exposure time : 3min

User-friendly image capture software "LAS-4000 Image Reader" Mac/Win compatible

The self-explanatory and user-friendly software allows specification of all image capture parameters, including sensitivity, resolution and image methods. The software automatically carries out all image correction functions. In increment mode, the signal increase is shown in real time, by capturing and automatically displaying up to 16 images. With this software users can create their own settings and methods. A photograph of the sample can be made and overlaid with the signal image.



Method/Tray position Screen



Exposure Increment Screen

Specifications and Configuration

Image Capturing Unit (Requires additional Analyzing Unit)

- **Camera head**
 - CCD chip : Fujifilm Super CCD Area Type chip
 - Number of pixels : 3.2 million pixels
 - Pixel size : Approx. 11 μm
 - Cooling : Two-stage thermoelectric module with air circulation
 - Cooling temperature : Down to -30°C (When room temperature is below 28°C.)
 - Dynamic range : Four orders of magnitude
 - Focusing and diaphragm : Automatic, Remote operation
 - Gradation : 16 bits
 - Exposure mode : Automatic / manual (normal / incremental / repetitive)
 - Exposure time : Automatic / manual (1 / 100 seconds to 30 hours)
 - Pixel correction : Dark-frame correction, flat-frame correction, distortion correction, etc.
 - Image quality correction : Binning and smoothing
 - Image size : Up to 12 MB (formats : FUJI and TIFF)
 - Read pixel size : Down to 35 μm
 - Maximum sample size : 18 x 12 cm
 - Interface : USB 2.0
- **Intelligent Dark Box LAS-4000mini**
Includes; EPI-Tray, USB cable, etc.
- **Lens**
High-sensitivity lens : FUJINON VRF43LMD II F0.85
*Nikon F1.4 lens is also available.

- **Operating conditions**
Line frequency : 50 / 60 Hz
Temperature : 15 - 28 °C
Humidity : 30 - 70% (no condensation)
Supply Voltage : 100 / 240V
Power Consumption : Approx. 0.2 kVA
- **Dimensions**
Camera head and dark box : 440 (W) x 670 (H) x 370 (D) mm
 : 440 (W) x 750 (H) x 380 (D) mm / With UV Illuminator

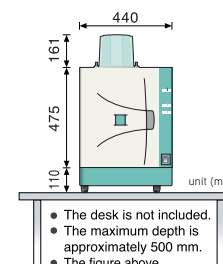
Optional Products

- **UV 2020 transilluminator set**
Includes: UV 2020 transilluminator, 605DF40 optical filter for EtBr detection, UV-Dia tray, Gel sheet, etc.
- **UV-Bay set**
Includes; Housing box for UV transilluminator, Filter frame, Filter housing, Bottom shield
- **EPI Blue Illuminator**
Includes; EPI Blue / White Illuminator, Y515 optical filter, etc.
*The product with EPI Blue illuminator is categorized as the class 1 laser(LED) (IEC60825-1+A2:2001)
- **Non-parallax tray**
- **Optical Filter**: 510DF10 for GFP detection
- **Optical Filter**: 605DF40 for EtBr detection
- **Optical Filter**: Y515

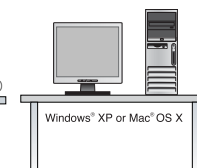
Analyzing Unit (separate product)

- **Computer**
OS : Windows® XP / Mac® OS X
 - **Analysis software** : ScienceLab
- Remarks
- **Gel documentation is available by digitizing**

< Image capturing unit >



< Analyzing unit >



- The desk is not included.
- The maximum depth is approximately 500 mm.
- The figure above represents a model loaded with the UV illuminator.

<http://lifescience.fujifilm.com>

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