

WSE-6370/6370K

LuminoGraph III Lite

Chemiluminescence Imaging System



LuminoGraph III Lite

4 tray positions

Sample tray and white LED transilluminator can be positioned according to the sample size



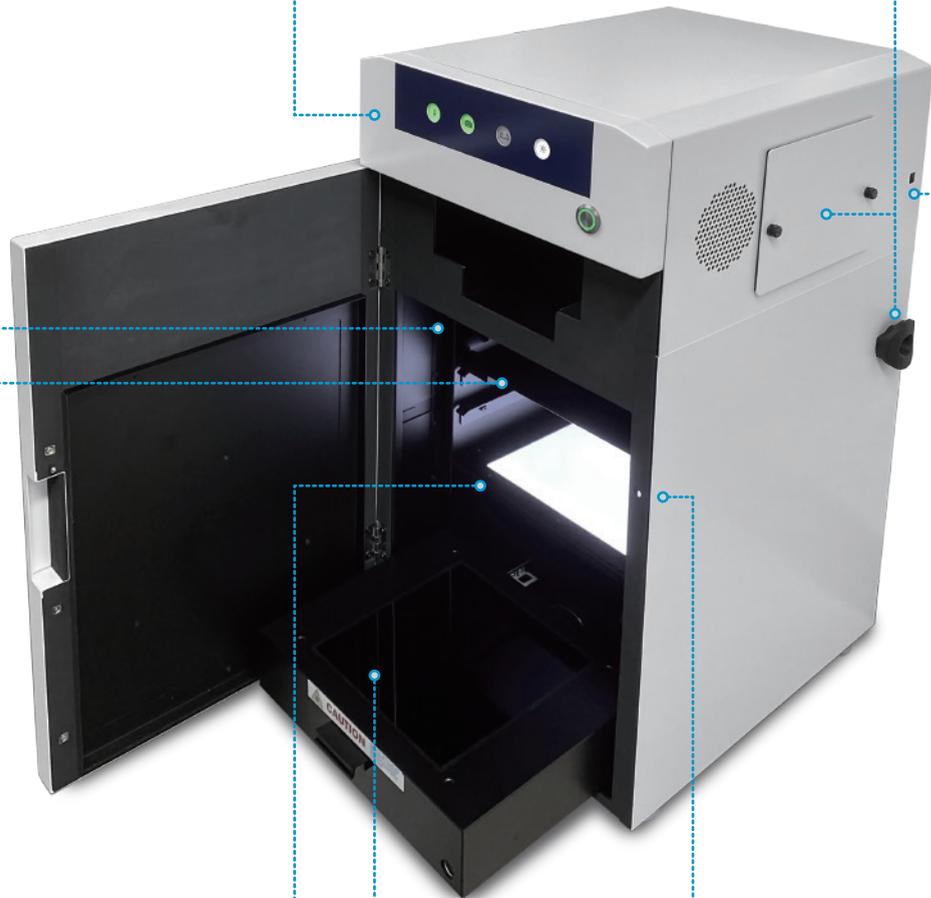
Indicator

Cooling status, capturing status, light source status (ON/OFF)

Filter wheel, External light source

Can accommodate light source and emission filter for RGB or NIR fluorescence

※ Optional



Sample tray

Imaging of blots (Western blots or dot blots, etc.)



White LED transilluminator

Imaging of CBB stained gels, silver stained gels



※ Semi-permanent LED light that doesn't consume UV life

Safety

UV turn off automatically when the door is opened

USB port

Connect with PC

UV transilluminator

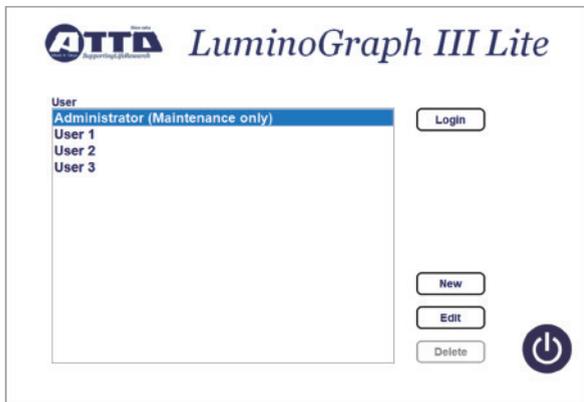
Imaging of fluorescent stained gels (DNA or RNA, etc.)



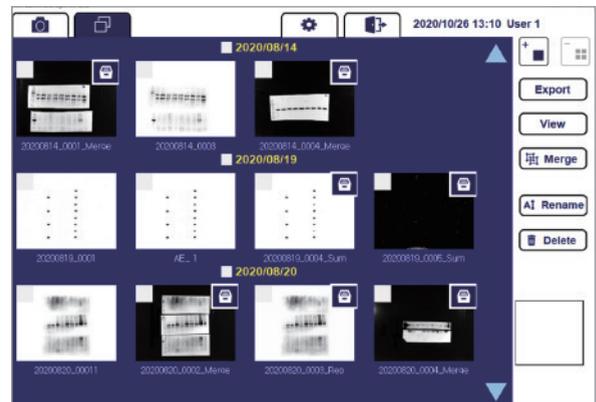
※ Optional

Easy to Use

User registration and file management



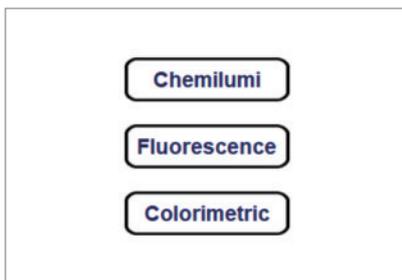
Register user ID and manage imaging files individually. Imaging files are saved in the logged-in user's folder.



The captured image displayed in chronological order. You can export or delete multiple images by select a date.

Intuitive button

Select Application



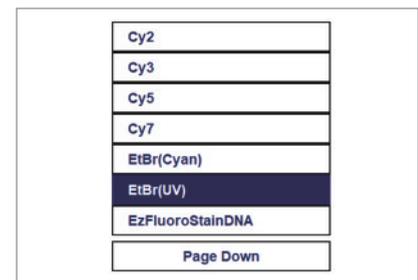
Easy to capture. The menu is configured according to the applications.

Enable Auto Exposure



The Auto Exposure function can be applied to all applications.

Easy to set for Fluorescent dye

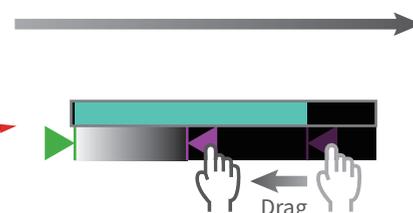


One-click optimal settings for fluorescent dye

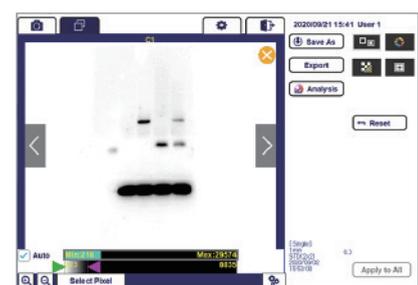
Simple Contrast adjustment



Select a file in Image Viewer



Drag the Contrast icon

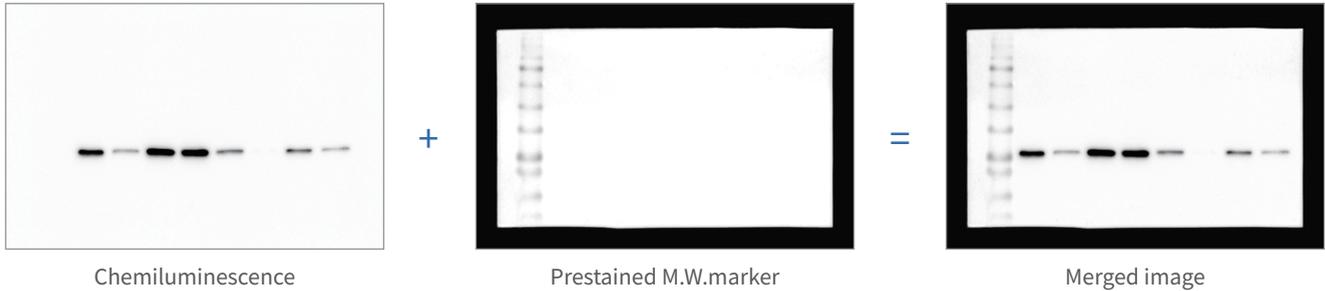


Reflected on the displayed image

Powerful Auto Exposure

Auto Merge

Western blot auto exposure provides Auto Merge function. Easily check the M.W. of the target protein.



Easily capture low-sensitivity images with Set Area function

Many Imaging systems that support Auto Exposure capture images basis on the strongest signal to avoid saturation. For this reason, it may be difficult to detect target protein if you capture an image with a big difference in sensitivity or the nonspecific band's signal is strong.

ATTO Imaging systems, including the LuminoGraph III Lite, have Set Area function. Bands that exist in a selected area are detected. Images are saved as many as area selected.

Capture an image of samples at once with large differences in expression level

Chemilumi Auto Exposure

Set Area

Marker Image

Exposure Time

Add Area

Delete Area

Sum

Elapsed Time

00:00:00 / 00:06:00

Tools

Auto Min:1445 Max:34798

0: Non-filter 3: 14x10cm HR(1x1)

First, capture a sample of high sensitivity

Capture a sample of low sensitivity automatically

When capturing multiple blots, the exposure time is calculated for each specified area and each images are taken. Even the difference in the expression level is large, good results are obtained.

Detect samples with weaker sensitivity

Common Auto Exposure

Set Area Auto Exposure

Auto Exposure

Auto Exposure + Set Area

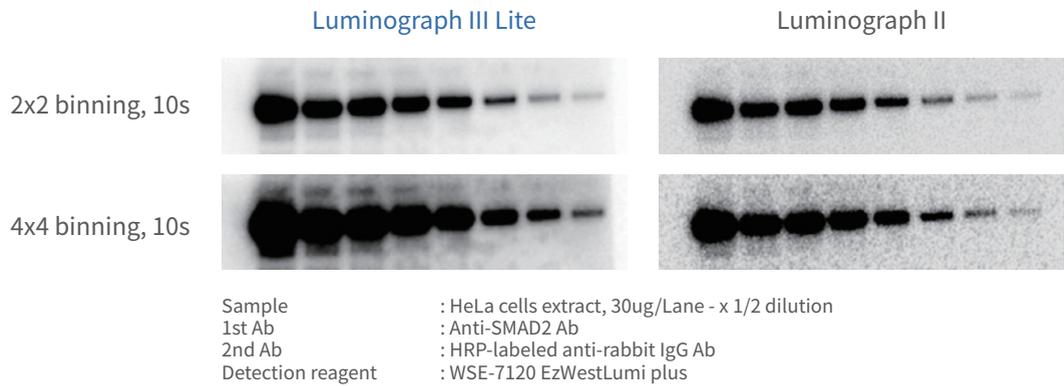
Difficult to detect weak signals with common Auto Exposure

Can detect weak signals with Set Area function

If the target protein's signal is weaker than other proteins such as non-specific bands, it's difficult to detect. In this case, you can detect the target protein by setting the area.

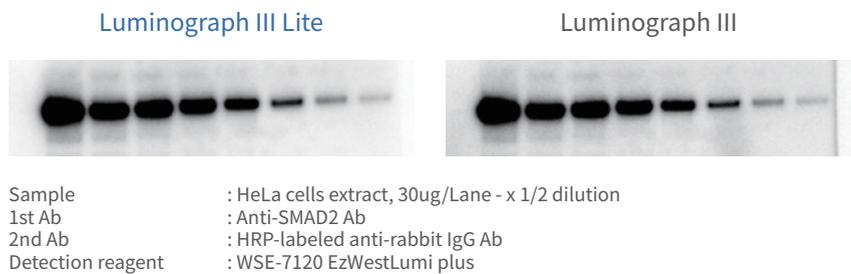
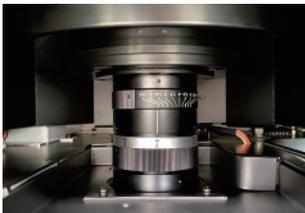
High Sensitive Imaging

Improved performance



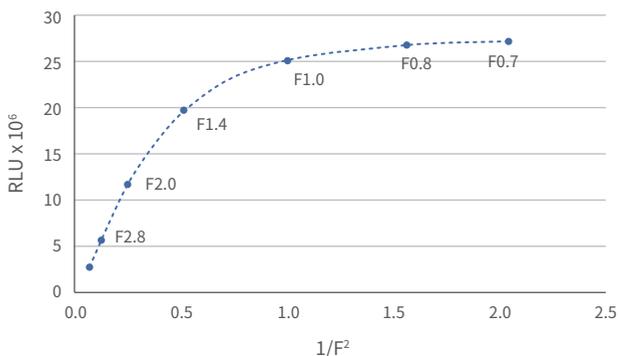
Performance is higher than our previous models. Noise is greatly reduced and sensitivity is increased. Even if you increase the binning level to detect weak signals, the device also detects the band cleanly.

High sensitivity



Adopted the lens and sensor that are the same as our high-end model. Lightweight, cost-effective, and high performance.

F 0.8 lens suitable for high sensitivity imaging



Theoretically, the light collection efficiency increases as the inverse of the square of the F. But, the smaller the F value, the greater the gap between the theoretical value and measured value. This is due to the effect of microlens on the surface of the sensor.

The LuminoGraph III Lite features a high sensitivity F0.8 fixed focal lens, with little distortion and maximum brightness.



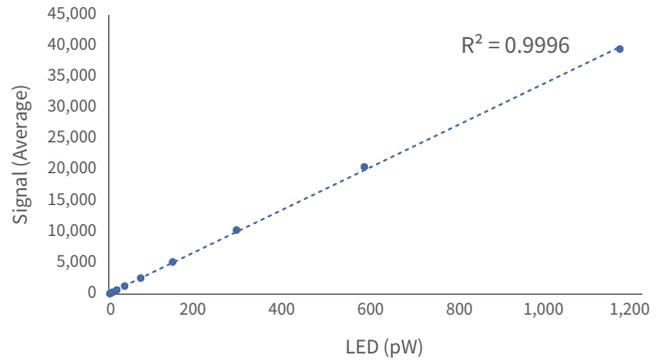
Highly Reliable Results

Powerful quantification and wide dynamic range

A signal detection proportional to the amount of protein is required for the quantification of Western blot, and a wide dynamic range is required to detect weak signals.

The right graph shows the signal measured using a reference light source emitting a faint light. You can see the linearity of R² value over 0.999.

The Luminograph III Lite has excellent linearity for the wide dynamic range, so it can be quantified simultaneously even if the difference in the expression level is large.



Sample : Standard LED (WSL-1200 KohshiFundam)
Exposure : 2x2 binning, 5s

Superior reproducibility

Repeat	Intensity
File_01.tif	39,304,149
File_02.tif	39,316,381
File_03.tif	39,290,742
File_04.tif	39,334,862
File_05.tif	39,381,957
File_06.tif	39,368,301
File_07.tif	39,338,288
File_08.tif	39,388,014
File_09.tif	39,369,365
File_10.tif	39,347,442
Average	39,343,950
SD	31,507
Uncertainty (k=2)	0.16%

To trust the results of the images captured, reproducibility is required that detect the same amount of signals equally.

The table on the left is the uncertainty produced by repeatedly captured images using a reference light source (WSL-1200 Kohshifundam) and analyzing the intensity of the image. It has excellent reproducibility within $\pm 0.2\%$ uncertainty.

Sample : Standard LED (WSL-1200 KohshiFundam)
Exposure : 2x2 binning, 10s



WSL-1200 KohshiFundam, our reference light source for validation, was used for reliability test.

WSL-1200 KohshiFundam

- Standard light source for verification with specified luminous flux
- 11 step variation in light volume from 1/1 to 1/1024 by PWM (Pulse Width Modulation) control
- Deal with the linearity test of photometric equipment
- Suitable for reproducibility testing, as the amount of light is equal even with changes in environmental temperature

Quantitative Analysis

Densitometry CS Analyzer 4

This software performs various analysis such as intensity measurement, M.W. analysis, pI analysis, and relative quantity, etc. by selecting analysis modes according to sample types such as Lane, Spot, and Plate.

It also has the ability to adjust images such as image rotation, contrast adjustment, and merge, and the adjusted images can be stored in various formats.

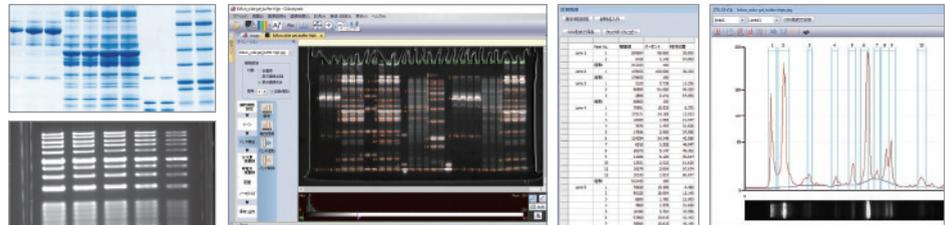
You can save the analysis results as a CSV file that is available in MS Excel and save data in report format, including images and Standard curve, as PDF files.



ATTO Densitometry Software
CS Analyzer 4

Lane Analysis

Quantification of DNA gels or protein gels. Analyze bands and background automatically and calculate the intensity of bands of each lane.

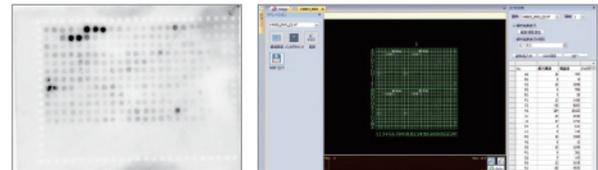


Spot Analysis



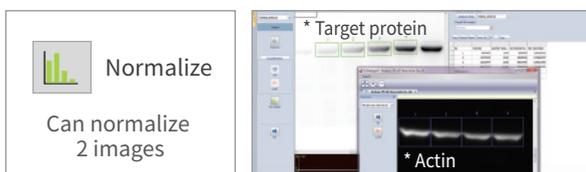
Quantification of regions of interesting in western blotting, culture cells, or living organisms.

Plate Analysis



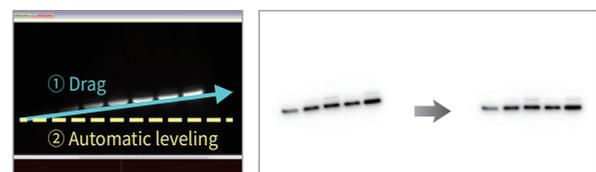
Quantification samples in microplate, array, or dot blotting.

Normalization



We support normalization that compares the relative abundance of a specific protein of blots that are captured separately. Use CS Analyzer instead of inconveniently calculate yourself.

Free Rotation



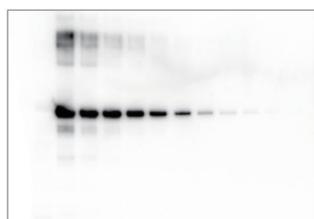
Enable easy leveling function. Draw a line which you want to make vertically by dragging a mouse.

Specification

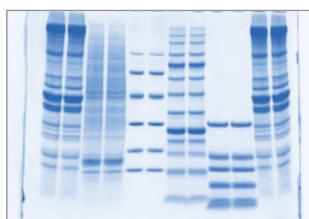
Specification

		LuminoGraph III Lite	
Model		WSE-6370K (Basic model)	WSE-6370 (UV model)
CCD Resolution		6 Mega Pixels (2750 x 2200)	
Pixel density		16-bit (65,536 gray levels)	
Camera lens		F 0.8	
Binning		1x1 , 2x2, 4x4, 6x6	
Filter		Motorized, 5 position (ND)	Motorized, 5 position (ND / 535nm)
Imaging area		4 position (10 x 7.5 cm / 14 x 10 cm / 18 x 13 cm / 26 x 20 cm)	
Control		Windows PC (Windows 10, 32 / 64 bit) & Control SW	
Data Output		16-bit TIFF, 8-bit TIFF, 8-bit JPEG, 8-bit BMP	
Power		100 - 240 VAC, 50 / 60 Hz, 200 W (MAX)	
Dimension		39 (W) x 46 (D) x 75 (H) cm	
Weight		46.6 kg	50.3 kg
Light source	Epi White LED	O	O
	Trans White LED	O	O
	Trans UV	X (Optional)	O

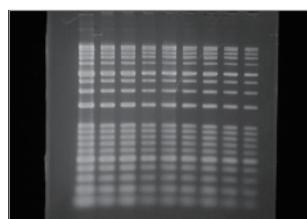
Application



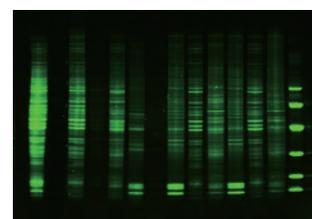
Chemiluminescent western blot



Colorimetric stained protein gel



Fluorescent stained nucleic acid gel



Fluorescent stained protein gel



ATTO Corporation

Providing research solutions for Biochemistry / Molecular Biology / Genetic engineering

Head Office: 3-2-2 Motoasakusa, Taito-ku, Tokyo, 111-0041 JAPAN

TEL: 81-3-5827-4863 FAX: 81-3-5827-6647 Email: eig@atto.co.jp

■ URL <http://www.atto.co.jp/>