



FastGene® FAS-BG LED BOX





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1. GENERAL Information

Thank you for purchasing the FastGene® FAS-BG LED BOX Imaging System, a stand-alone gel documentation system. The Blue/Green LED technology permits the detection of DNA with highest sensitivity and without harming your eyes, skin or your sample. With the white LED light you can image protein gels stained with coomassie or silver staining. The white LED epi-illumination allows the documentation of opaque surfaces such as Petri dishes or Western Blot membranes.

Please read carefully the following notes to be able to properly use the FastGene® FAS-BG LED BOX Imaging System.

1.1 Warranty

The FastGene® FAS-BG LED BOX is warranted against defects in materials and workmanship for 1 year. In case of any defects occurring in the instrument or accessories during this warranty period, NIPPON Genetics EUROPE will repair or replace the defective parts at its discretion without charge.

The following defects, however, are specifically excluded:

- Defects caused by improper operation.
- Repair or modification done by anyone other than NIPPON Genetics EUROPE or an authorized agent.
- Damage caused by substituting alternative parts.
- Use of fittings or spare parts supplied by anyone other than NIPPON Genetics EUROPE.
- Damage caused by accident or misuse.
- Damage caused by disaster.
- Corrosion caused by improper solvent or sample.

For any inquiry or request for repair service, contact NIPPON Genetics EUROPE or your local distributor. Please send a message containing information about the model and serial number of your instrument.

1.2 Regulatory notice

IMPORTANT:

This NIPPON Genetics EUROPE instrument is designed and certified to meet safety standards and EMC regulations. Certified products are safe to use when operated in accordance with the instruction manual. This instrument must not be modified or altered in any way. Alteration of this instrument will:

Void the manufacturer's warranty
Void the safety and EMC certification
Create a potential safety hazard

NIPPON Genetics EUROPE is not responsible for any injury or damage caused by the use of this instrument for purposes other than those for which it is intended, or by modifications of the instrument not performed by NIPPON Genetics EUROPE or an authorized agent.

1.3 Safety information

Please carefully read the following safety information notes to be able to properly use the FastGene® FAS-BG LED BOX:

Please wear appropriate personal protective equipment. Please read the instructions manual to properly use the FastGene® FAS-BG LED BOX. Using instruments with FastGene® Blue/Green LED technology transilluminators will normally not damage samples or eyes and skin of the user. However, prolonged exposure of human naked eyes with light irradiation in the blue spectrum may increase the probability of suffering from retina diseases. Therefore, we recommend using the amber filter shield included in the package, when handling the Blue/Green LED transilluminator while the FastGene® FAS-BG LED BOX is open and the Blue/Green LED light is turned on.

Operate the FAS-BG LED BOX only if it is connected to a safety socket.
Place the unit on a level surface with minimal chance of dropping.

1.4 Contact information

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E-Mail: info@nippongenetics.de

For more detailed product information, contact details, questions, or trouble shooting please visit our website www.nippongenetics.eu or contact us via info@nippongenetics.de.

FastGene® is a registered trademark of NIPPON Genetics EUROPE GmbH.



2. Technical Specifications

| Catalog number | |
|----------------|----------------|
| GP-04LED | FAS-BG LED BOX |

| Image capture | |
|---------------|--------------------------------|
| Sensor | CMOS Sensor |
| Camera | 8 MPixel camera |
| Image format | TIFF, JPEG and PNG |
| Exposure time | 0.2 - 2 sec, 21 exposure steps |

| Light sources | |
|-----------------------|--|
| Light sources | Blue/Green LED transilluminator White epi light White LED light transilluminator |
| Transilluminated area | 16 x 11,5 cm |

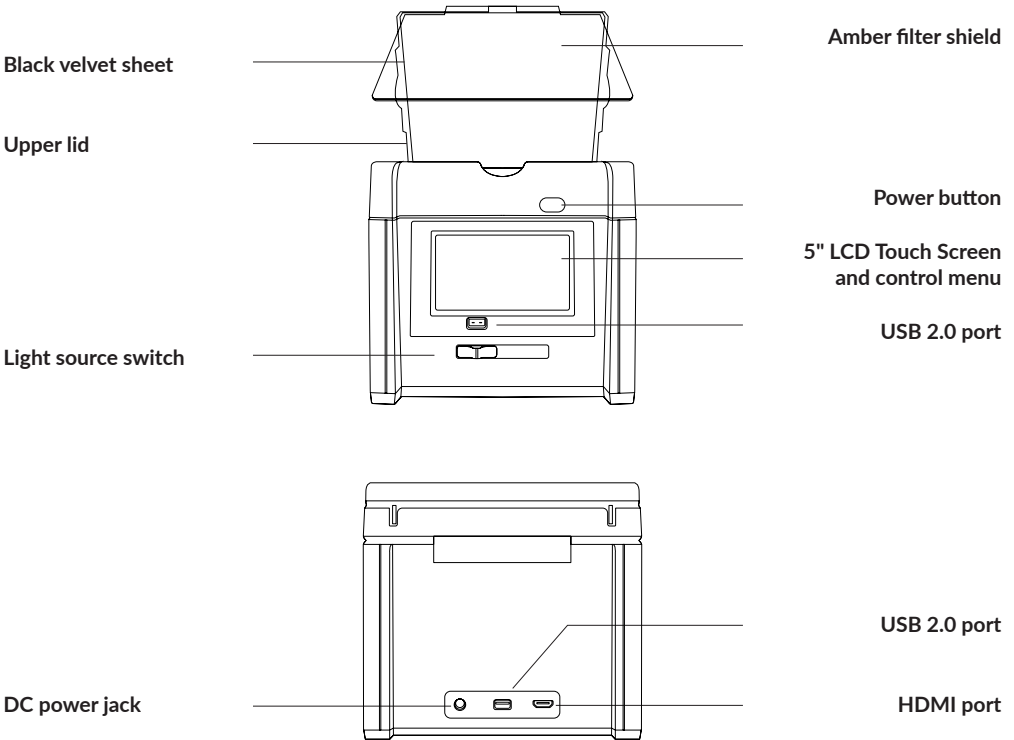
| Display/Software/Connections | |
|------------------------------|--|
| Display | 5" Color LCD Touch Panel |
| Software | Inbuilt control software |
| Connections | 2x USB Port (1x front, 1x back) 1x HDMI Port Thermal printer support |

| General Info | |
|------------------------|---------------------|
| Power | 12V, 4.16A |
| Dimensions (H x D x W) | 23 x 25.4 x 20.7 cm |
| Gel Tools | Amber filter shield |
| Weight | 3.2 kg |

3. System Operation

3.1 Product content and overview

| GP-04LED Product Content |
|--|
| FAS-BG LED BOX |
| User manual |
| A/C Power Transformer (12 V, 4.16 A, DC) |
| Amber filter shield |
| Black velvet sheet |





3.2 Initial setup

Remove all tapes that hold items in place for shipping. Place the FastGene® FAS-BG LED BOX unit on a flat surface. Connect the included DC adapter to the back of the unit then plug into power outlet. Push the power button.

Initiate the desired application

Agarose gel scanning (Blue/Green LED light) (section 3.3)

DNA extraction from gel (section 3.4)

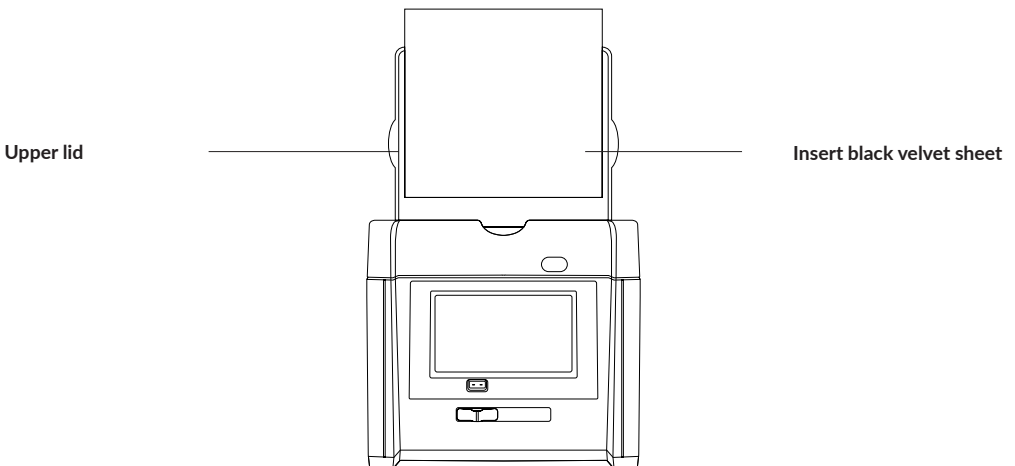
Membrane/Petri dish scanning (White epi light) (section 3.5)

Colorimetric gel scanning (White LED light) (section 3.6)

3.3 Agarose gel scanning (Blue/Green LED light)

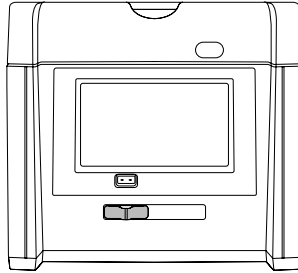
3.3.1 Gel positioning

Open the lid of the FastGene® FAS-BG LED BOX. Slide the black velvet sheet into the groove of the lid to cover the white light area of the lid (see figure below). The black velvet sheet reduces the background.

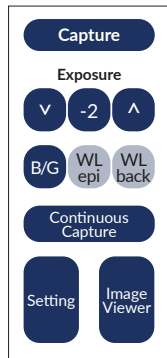


Place the gel tray with the agarose gel on the view area and close the lid. Note: the view area is waterproof. Hence, the usage of the gel tray is not obligatory.

Slide the light source switch on the front side of the instrument to the cyan light source (see figure below).



Press „B/G“ (Blue/Green LED light) on the control menu, displayed on the right side of the screen. This will turn on the Blue/Green LED light. A live image of the gel will be displayed on the screen.



3.3.2 Exposure time correction

Use the up and down buttons on the control menu to change and correct the exposure time until the appropriate exposure of the gel is reached. The exposure time can be adjusted from -10 (short exposure time) to +10 (long exposure time). The middle button displays the current exposure level (e.g. -2)





Press "Capture" to save the image to the internal storage of the FAS-BG LED BOX. The image can later be transferred on an external storage device (USB-drive).



If "Continuous Capture" is selected, the FAS-BG LED BOX will automatically record five images with an exposure ranging from -2 to +2. All five images will be saved on the internal storage of the system and can later be transferred on an external storage device (USB-drive).



3.3.3 Image viewer menu and external storage transfer

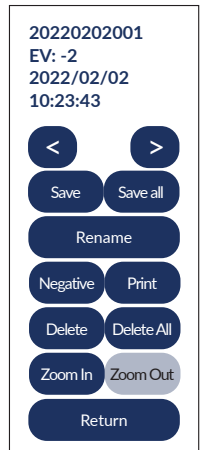
Press the "Image Viewer" button to enter the image viewer menu for viewing, printing and transferring recorded images.



The top of the image viewer menu displays the name, exposure level, date and time of each currently displayed image. Scroll through the recorded images by pressing the left and right buttons.

Image name, exposure level, date and time _____

Scroll through recorded images _____



Insert an external storage device in one of the two USB-ports (front or back) of the FAS-BG LED BOX. Press "Save" to transfer the currently displayed image to the external storage device. Press "Save all" to transfer all images currently stored in the internal storage.

Save

Save all

To change the name of the image press "Rename". The image name can contain a maximum of 15 characters.

Rename

Press "Negative" to display the current image in negative colours. Press "Save" to transfer the negative image version to the external storage device.

Negative

Save

If an external printer is connected to the FAS-BG LED BOX via USB (see section 3.8), the currently displayed image can be directly printed by pressing "Print".

Print

Press "Delete" to delete the currently displayed image. Press "Delete All" to delete all images currently stored in the internal storage.

Delete

Delete All

Use the „Zoom in“ and „Zoom out“ buttons to enlarge a specific area of the gel. Please note that the zoom function can only be used for viewing purposes and an enlarged image view cannot be saved or transferred.

Zoom In

Zoom Out

Press "Return" to return to the previous display menu.

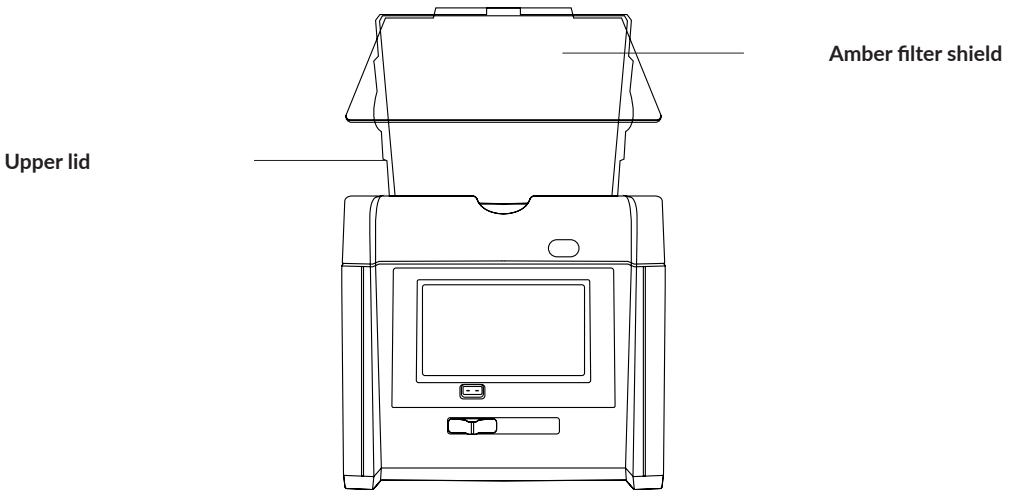
Return



3.4 DNA extraction from agarose gels

The FastGene® FAS-BG LED BOX is equipped with an amber filter shield to filter out the Blue/Green LED excitation light. The filter enables visualization of DNA bands for the extraction of DNA from the agarose gel. Slide the light source switch on the front side of the instrument to the cyan light source.

Open the upper lid of the FAS-BG LED BOX. The Blue/Green LED light will automatically switch off. Position the central opening of the amber filter shield in the hanging tab. Make sure the two bent areas are placed against the lid.



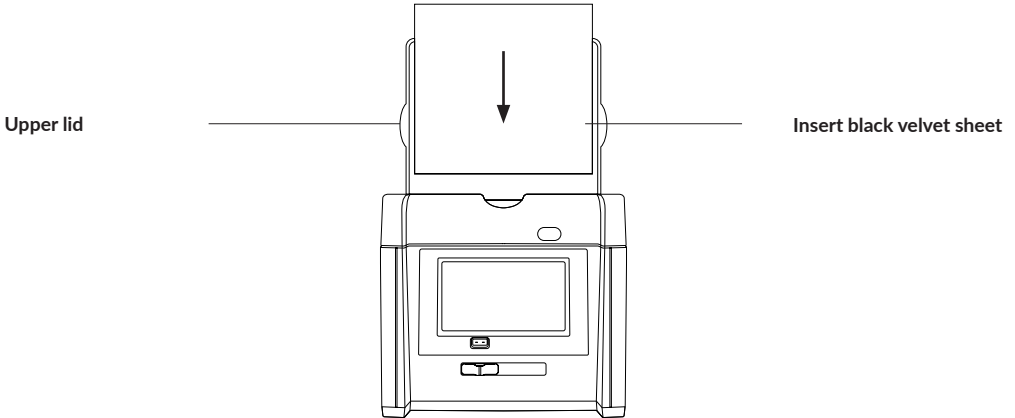
Turn the Blue/Green LED light back on by pressing the "B/G" button.



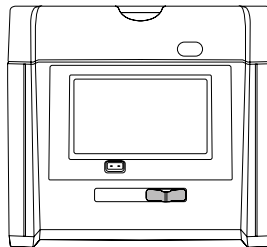
Excise visible DNA fragments from the gel by looking through the amber filter shield.

3.5 Membrane/Petri dish scanning (White epi light)

Open the lid of the FastGene® FAS-BG LED BOX. Slide the black velvet sheet into the groove of the lid to cover the white light area of the lid (see figure below). The black velvet sheet reduces the background.



Place the membrane/Petri dish on the view area and close the lid. Slide the light source switch on the front side of the instrument to the white light source.



Press "WL epi" on the control menu, displayed on the right side of the screen. This will turn on the white epi light.

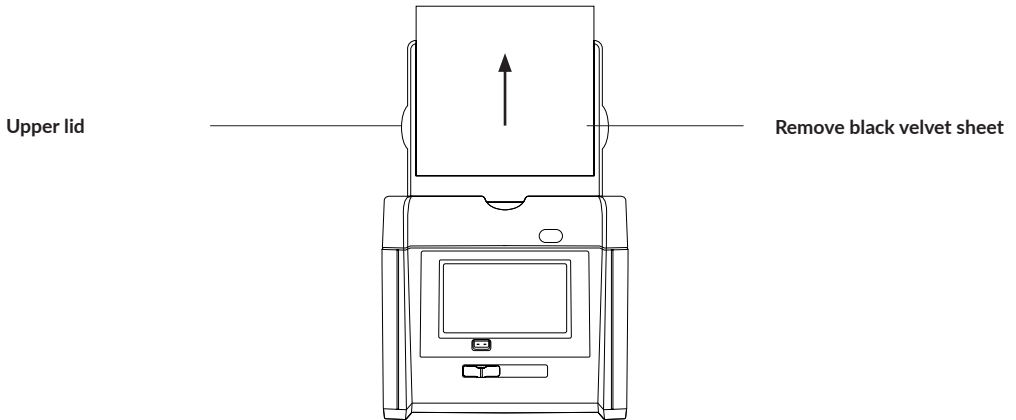


A live image of the membrane/Petri dish will be displayed on the screen. Refer to section 3.3.2 for exposure time correction and to section 3.3.3 for image viewing and external storage transfer.



3.6 Colorimetric gel scanning (White LED light)

Open the lid of the FastGene® FAS-BG LED BOX. Remove the black velvet sheet from the inside of the lid.



Place the transparent colorimetric (protein) gel on the view area and close the lid. Note: the view area is water-proof. Slide the light source switch on the front side of the instrument to the white light source (see section 3.5). Press "WL back" on the control menu, displayed on the right side of the screen. This will turn on the white LED light transilluminator.



A live image of the colorimetric gel will be displayed on the screen. Refer to section 3.3.2 for exposure time correction and to section 3.3.3 for image viewing and external storage transfer.

3.7 General settings

Setting

Press "Setting" to get to the general settings menu.

The general settings menu displays the following screen:

Update S/W

Sleep

Date
Time

Mouse

Save Format:

JPEG

Color Type:

Color

The device software can be updated by pressing "Update S/W". Press "Sleep" to adjust the time after which the FAS-BG LED BOX goes into sleeping mode. You can adjust the time between 1 min, 5 min, 10 min, 30 min or never. Press "Date Time" to set the date and time on the device. It is possible to connect an external mouse to the FAS-BG LED BOX via one of the two USB-ports. Activate the "Mouse" button to use the external mouse and deactivate the "Mouse" button to use the device via touch screen.

Mouse active

Mouse

Mouse

Mouse inactive

Press the button next to "Save Format" to set the image file type. The currently used file type is displayed on the button. Image files can be saved as TIF, JPEG or PNG.

TIF

JPEG

PNG

Press the button next to "Color Type" to set the image color. The currently used image color type is displayed on the button. The image color can be set to Color or Gray.

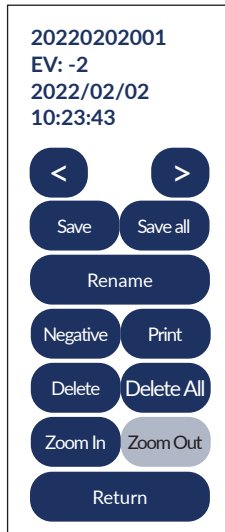


3.8 Connecting an external printer

Connect the external printer to the FAS-BG LED BOX via the USB-port.
Press the Image viewer button.



Press "Print" in the image viewer control menu to directly print the displayed image on the external printer.



3.9 Connecting an external (touch) monitor

Connect the external monitor to the HDMI-port of the FAS-BG LED BOX. Note that the monitor should be connected before switching on the device. The active display automatically switches to the external monitor. For using an external touch display connect it via the HDMI-port and USB-port to the FAS-BG LED BOX.







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