NIPPON Genetics EUROPE
INNOVATION FOR YOU

Gel Documentation Systems

Still destroying your DNA with UV-light?

Overview

FAS-X

FAS-DIGI PRO

FAS-DIGI Compact

FAS-BG LED BOX

FAS-Nano

Transilluminators

Contents

Blue/Green LED light

The danger of UV Light

Detection of nucleic acids is mainly performed using light in the UV range. However, DNA is able to absorb light in the UV spectrum. This property leads to DNA modifications and DNA degradation when exposed to UV-light. It damages sample DNA and is also dangerous for the user.

Cloning efficiency of DNA treated with UV light

0 sec 30 sec 60 sec

Blue/Green LED - The revolution

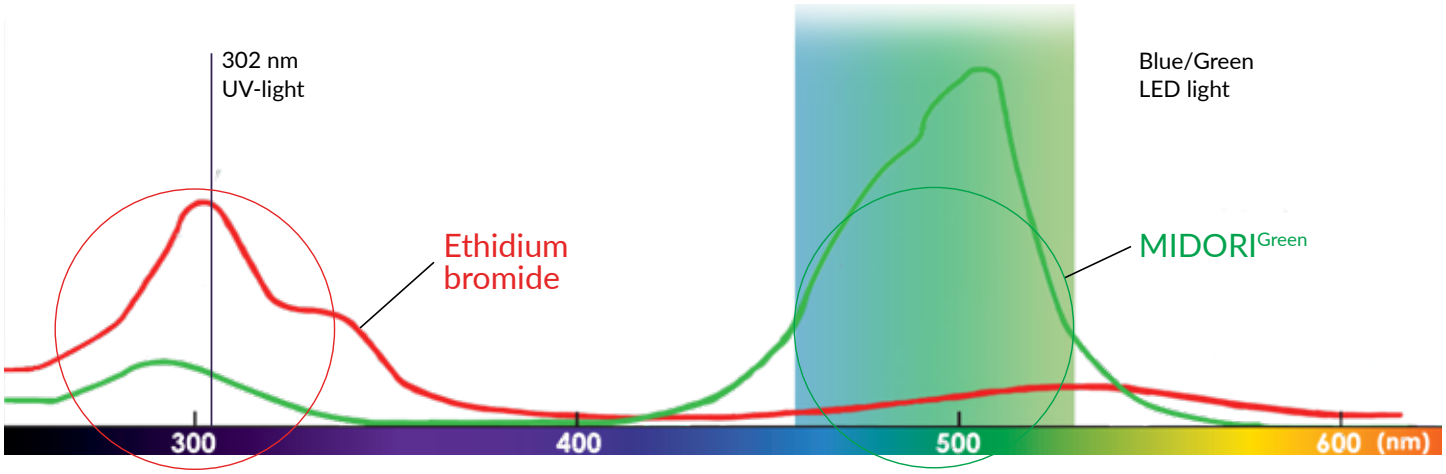
Instead of using a single wavelength, the Blue/Green LED technology uses a combination of wavelengths in a spectrum of light from 470 nm to 520 nm. This Blue/Green light is able to excite all common **red and green DNA dyes** with a very high intensity. This intensity can be achieved by the accumulated energy absorption of the dyes.

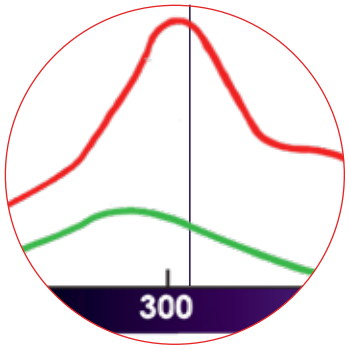
Cloning efficiency of DNA treated with Blue/Green light

0 sec 30 sec 60 sec

No DNA damage -
Better cloning efficiency!

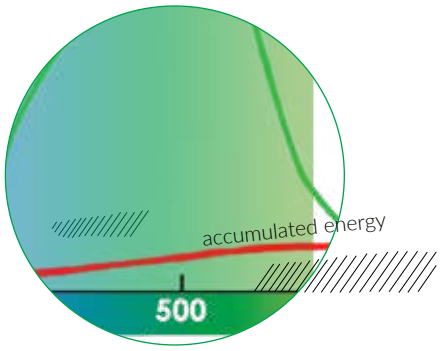
Blue/Green LED light





UV Light: Good detection, insecure signal

UV light transilluminators use just a single wavelength for the visualization of DNA. Red and green DNA dyes, like ethidium bromide or the MIDORI Green dyes usually have a good absorption in the UV light spectrum. This results in DNA bands with a sufficient intensity. However, UV light is dangerous for the user and for the sample DNA. Just 30 sec of UV light exposure significantly reduces the cloning efficiency and has consequences for further downstream applications. For this reason, the visualization of DNA with UV light is not the state-of-the-art method anymore.



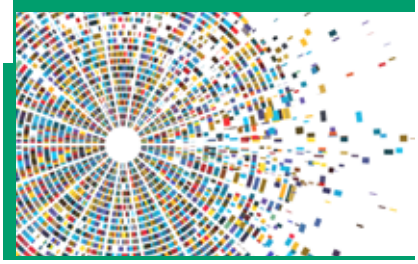
Blue/Green: Safe detection of all red and green DNA dyes

In contrast to UV light, Blue/Green LED technology uses a spectrum of light between 470 nm and 520 nm. This light is not harmful for the DNA or for the user. Even ethidium bromide or other red DNA dyes with a low absorption in this spectral area show DNA band intensity comparable to UV light. The reason for that is the **accumulated energy absorption of the DNA** in the Blue/Green spectrum. Green DNA dyes show very high absorption intensity in the Blue/Green light spectrum, leading to DNA bands with superb intensity.

Try Blue/Green - Your Benefits:

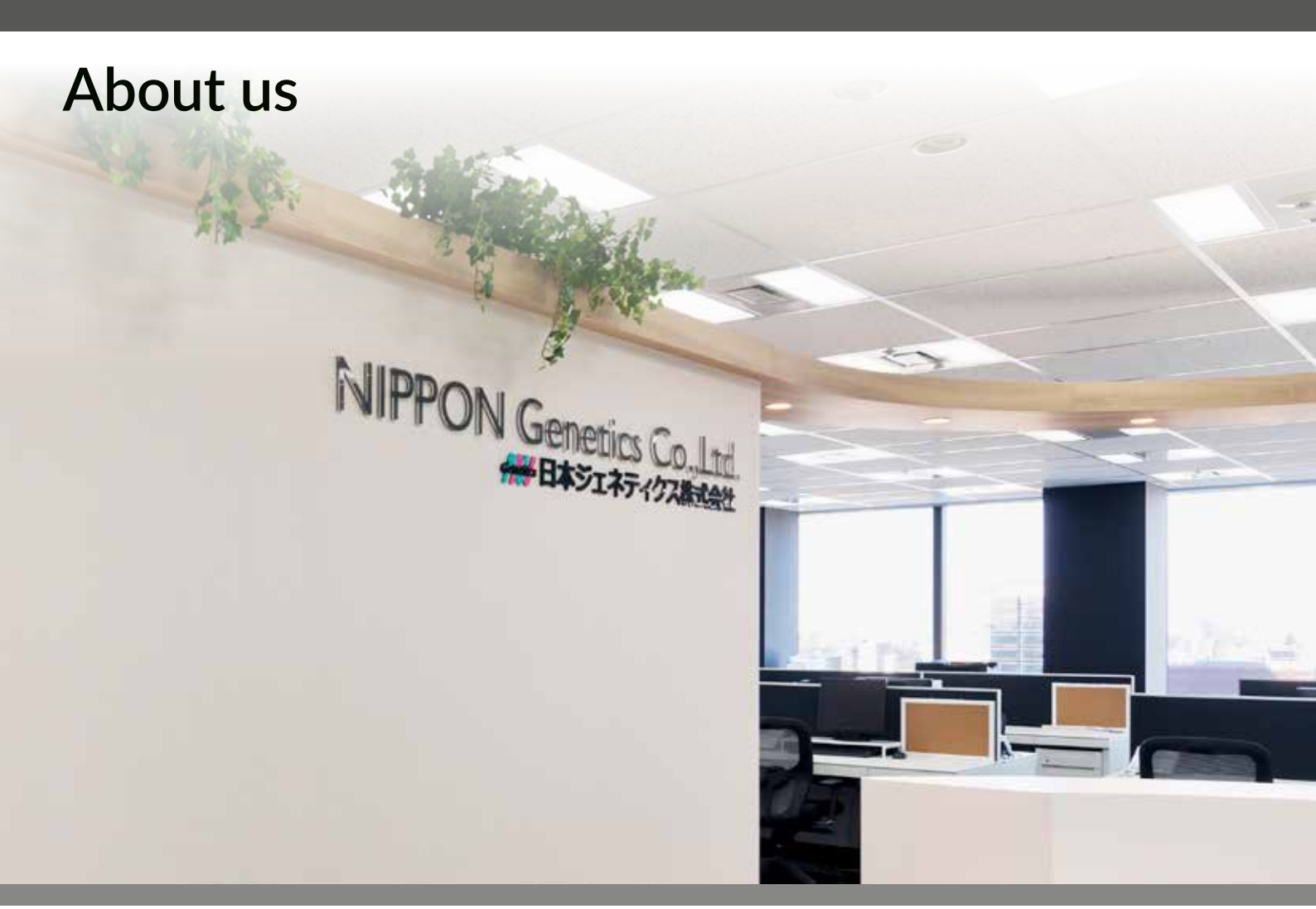
#1: Better cloning efficency

#2: Less error during sequencing



#3: Healthier working enviroment

About us



NIPPON Genetics EUROPE

NIPPON Genetics EUROPE is a Japanese-German life-tech company, which focuses on the development of cutting edge products for molecular and cell biology laboratories. We have over 30 years experience in the life-tech sector with offices in Tokyo and Kyoto, in Japan, as well as in Dueren, in Germany. We are a growing group of highly motivated people with a strong background in life-science research. In the past few years, we have become a team that can support you not only with innovative products but also with advice on applications. This background also allows us to understand your needs and to develop new and exciting products for you.

Our website

On our website you can find all the information you need about our products. Whether you need a manual, MSDS, safety report or other material, just visit our website and download everything you need. We are always happy to receive your feedback about our service and products.
You can also find Technical Notes about many of our products, which we create with scientific enthusiasm in our laboratory. Furthermore, we get great feedback from the scientifc society, which leads to the creation of various Application Notes.
Customers from Germany, Austria and the Netherlands can directly order products in our webshop. Every product page is available in English or alternatively in German or French.

www.nippongenetics.eu

Imaging systems comparison

FAS-X
(GP-FAS-X)

FAS-DIGI PRO
(GP-07LED)

FAS-DIGI Compact
(GP-08LED)

FAS-BG LED BOX
(GP-04LED)

FAS-Nano
(GP-06LED)

	FAS-X	FAS-DIGI PRO	FAS-DIGI Compact	FAS-BG LED BOX	FAS-Nano
Safe Blue/Green LED light	●	●	●	●	●
Detection of Green DNA dyes	●	●	●	●	●
Detection of Red DNA dyes	●	●	●	●	●
White Light Imaging	●	●	○	●	○
High Resolution Camera	●	●	●	○	○
Parfocal Lens	●	○	○	○	○
Software included	●	●	○	●	○
Networkable	●	●	○	○	○
Stand-Alone System	●	*◐	●	●	○
Large illuminated Area	●	●	●	○	○
Quantification of DNA and RNA	●	●	○	○	○
CE Certification	●	●	●	●	●

* Operation also possible without Computer

FAS-X

FastGene® FAS-X

Key features

- **Best image quality with a high-resolution 20 camera**
- **Stand-alone system with in-built computer**
- **Easy-to-use FAS-X imaging software controlled by a 13“ full HD touchscreen or USB Keyboard or Mouse**
- **Blue/Green LED Transilluminator**

Advanced stand-alone documentation

The FAS-X is our new most advanced imaging system, working with the innovative Blue/Green LED excitation light technology. The Design is a minimalistic approach towards Usability. The high-quality white and modern surface gives it an elegant look in the laboratory. We are proud that our new stand-alone device is manufactured and assembled in Germany.

Intuitive touchscreen operation

The compact system is equipped with a high-resolution 13.3“ full HD touchscreen. The device is super easy and intuitive to operate via the display. The Blue/Green LED transilluminator is integrated in a loading drawer, with a soft close function, to ensure absolute darkness and the best image quality without light contamination. The huge Blue/Green illumination area (21 cm x 26 cm) fits any gel size.

The software has been designed to make operating the device and communicating with the camera as easy as possible. The user-friendly interface is integrated in the touchscreen and allows recording the best gel formations with a few simple clicks. The software also includes a powerful editing function.

Made
In
Germany

FAS-X

13" full
HD touchscreen

Inbuilt FAS-X
imaging software

On/off button

Front status LED

BG LED
Transilluminator
26 cm x 21 cm

Soft Close Gel
Loading drawer

Technical specifications

Camera	
Camera sensor type	Scientific-grade CMOS
Image resolution	20 MPixel, (5472 px x 3648 px)
Image format	JPEG, TIFF, PNG, BMP
Exposure time	13 µs to 10 sec

Hood	
Material	Coated aluminium material
Access	Loading drawer
Filter	Amber Camera filter, Amber goggles
Status LED	Installed in the front

Footprint	
Dimensions (H x D x W)	53.2 cm x 44.3 cm x 37.5 cm
Weight	20 kg

Catalog number	
FAS-X	GP-FAS-X

Display/Software/Connections	
Display	13.3" full HD touchscreen
Display resolution	1920 x 1080
Internal storage	128 gb
Connections	LAN, 3x USB 3.0
Software	FAS-X imaging software
Rated Voltage	100-240 V, 50 / 60 Hz Power adapter 24 V, 6 A

Light sources	
Light sources	Blue/Green LED transilluminator White LED light
Transilluminated area	26 cm x 21 cm
Blue/Green LED light	470-520 nm

FAS-DIGI PRO

Key features

- 24 MPixel scientific grade camera
- Image Software with comprehensive features
- Fully networkable when connected to a PC
- White LED plate for the documentation of protein gels

Touch the revolution

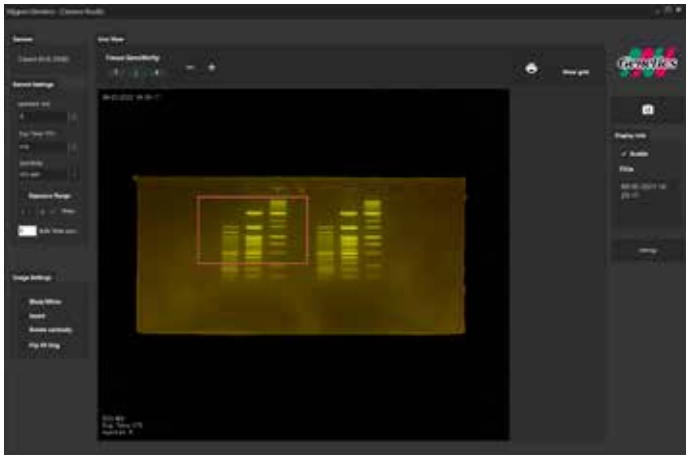
The FastGene® FAS-DIGI PRO is a powerful imaging system with Blue/Green LED-based gel documentation. It provides stunning images of DNA and RNA gels based on its Blue/Green LEDs technology.

Superior gel imaging

The FastGene® FAS-DIGI PRO comprises a large transilluminator with Blue/Green LED technology. The imaging area of 26 cm x 21 cm has a superb uniform illumination. This enables the detection of green and red DNA dyes with an immense signal intensity.

Imaging software

Control all settings of the camera in real time with the NIPPON Genetics Camera Studio software: Aperture, exposure time, sensitivity and focus. Mouse-driven optimization makes image optimization a click away! Images can be saved in TIFF and JPEG format, and directly printed by a printer connected to your PC.



With the imaging sofware of the FAS-DIGI PRO you can control all necessary parameters of the camera to analyze and optimize any gel image. These four settings will provide the highest quality images for DNA gels: aperture, exposure time, sensitivity and focus.

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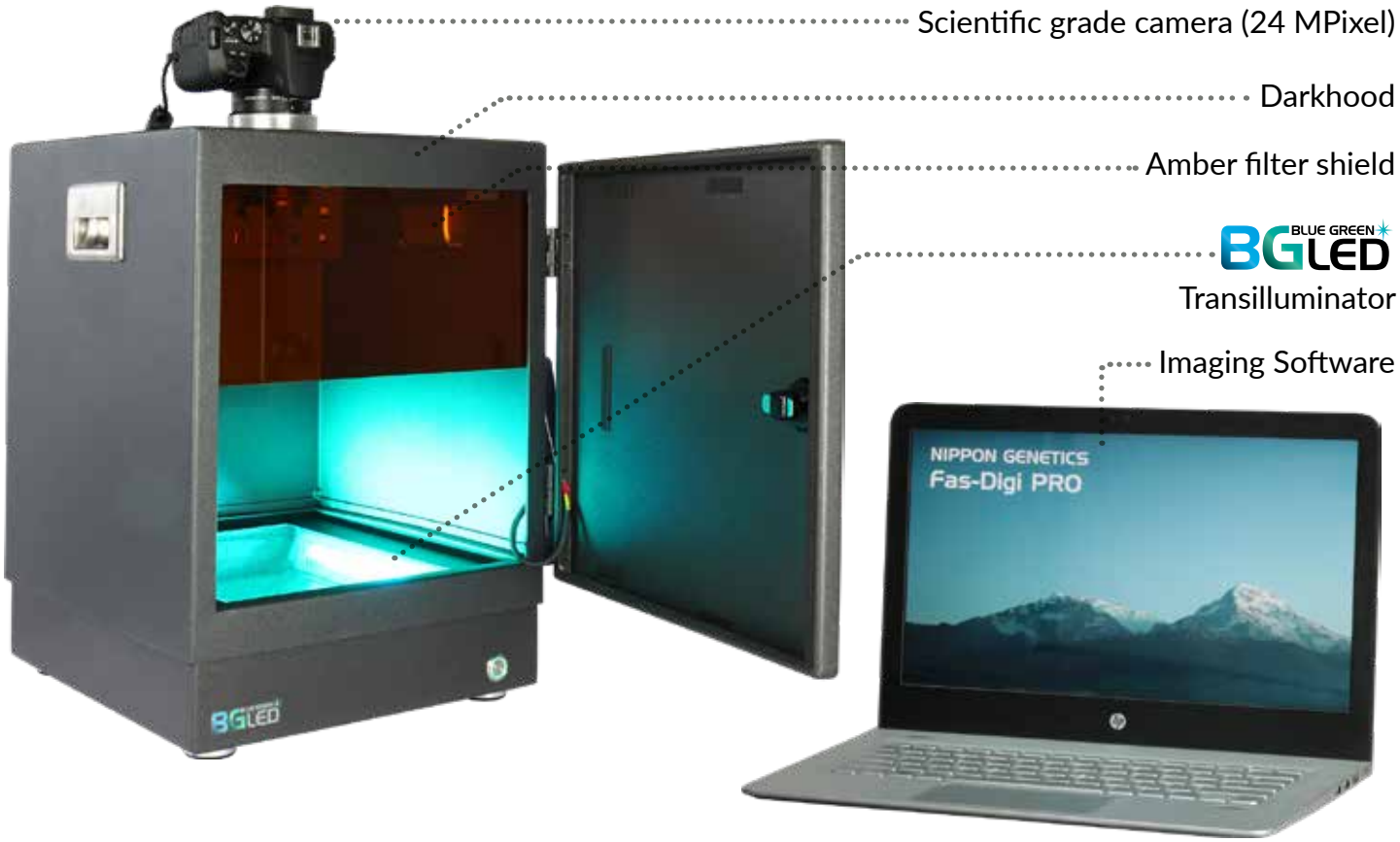
FAS-DIGI PRO



Technical specifications

Camera	
Camera type	Canon scientific grade camera
Sensor size	APS-C sized CMOS Sensor
Resolution/Image Size	24 MPixel, 6000 x 4000 pixel
Image format	TIFF and JPEG
Exposure time	0.00025 to 30 sec
Aperture	f / 4-5.6
Lens	18-55 mm zoom lens, manual
Zoom range	3 x zoom
Filter	Amber Filter for the lens

Footprint	
Dimensions (H x D x W)	57 cm x 35 cm x 32.5 cm
Weight	14 kg
Rated Voltage	100-240 V~, 50/60 Hz, A

Catalog number	
FAS-DIGI PRO	GP-07LED

Control Software	
Control Software	NIPPON Genetics Camera Studio v1.0, WINDOWS 10
Image storage	Host computer dependent
Interface	Host computer dependent
Rated Voltage	100-240 V, 50 / 60 Hz, 2 A

Hood	
Power unit	Power supply for transilluminator and camera
Access	Front door, 180°opened
Filter	Amber Filter Shield

Light sources	
Light sources	Blue/Green LED transilluminator White LED transilluminator (included)
Transilluminated area	26 cm x 21 cm
Blue/Green LED light	470-520 nm
White LED light	included

FAS-DIGI Compact

Key features

- **Compact stand-alone gel doc system**
- **High resolution camera with 24 MPixel**
- **Documentation of agarose gels**
- **Very large transilluminator**

Get the best image combined with the safest light

The FastGene® FAS-DIGI Compact is equipped with Blue/Green LEDs, increasing the high sensitivity without harming your eyes, skin or your DNA sample. It comes with a scientific grade camera and an inbuilt amber filter. The FAS-DIGI Compact uses the same powerful transilluminator as the FAS-DIGI PRO.

Made
In
Germany

The affordable Blue/Green LED gel doc system

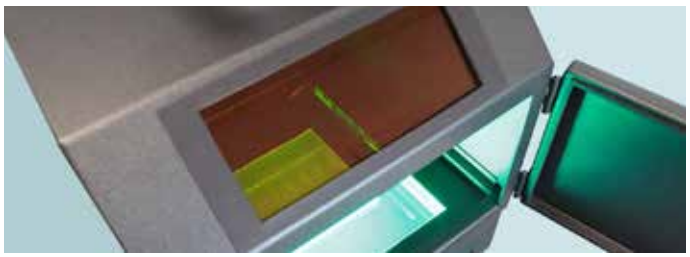
The FAS-DIGI Compact comes with a compact footprint combined with the advantages of the Blue/Green LED technology. This means that the detection of both, red and green DNA dyes, is possible.

Easy connection to a tablet

The FAS-DIGI Compact can be diretly connected to a tablet via the app, available in your prefered app store. Take pictures and transfer your data easily to the cloud using your tablet.

Amber filter window

The inbuilt Amber Filter viewing window allows you to look at your illuminated gel and easily cut out the desired DNA bands for further applications.



Easily view your illuminated gel through the Amber Filter window

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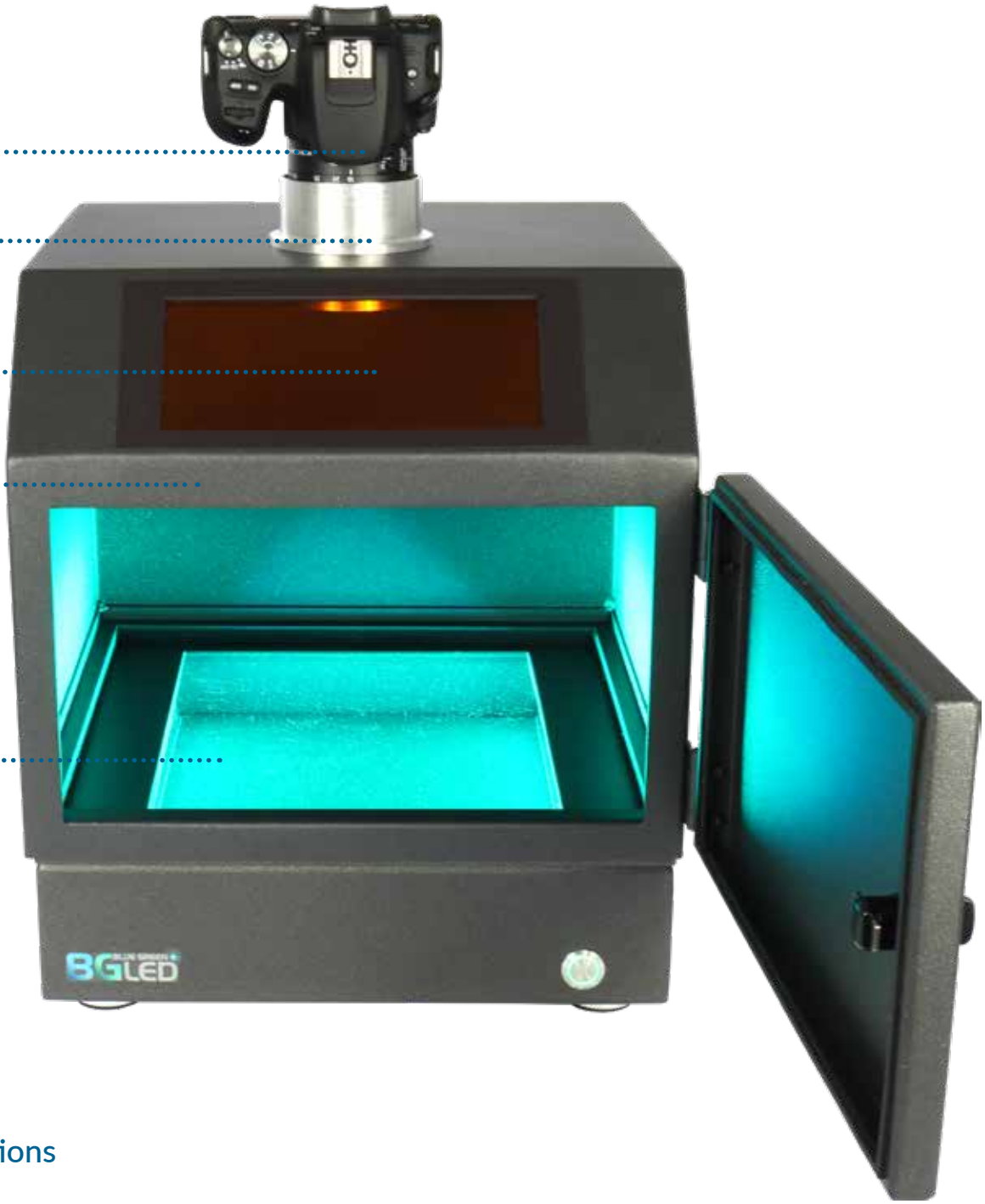
FAS-DIGI Compact



Technical specifications

Camera	
Camera type	Canon scientific grade camera
Sensor size	APS-C sized CMOS Sensor
Resolution/Image Size	24 MPixel, 6000 x 4000 pixel
Image format	JPEG & RAW CR3
Exposure time	0.00025 to 30 sec
Aperture	f / 4-5.6
Lens	18-55 mm zoom lens, manual
Zoom range	3 x zoom
Filter	Amber Filter for the lens

Light source	
Blue/Green Light	470-520 nm
Transilluminated area	26 cm x 21 cm

General Info	
Power	AC Adaptor, 12 V, 4.16 A
Dimensions (H x D x W)	50 cm x 35 cm x 32.5 cm
Gel Tools	Amber View Shield, SD-Card
Weight	14 kg

Catalog number	
FAS-DIGI Compact	GP-08LED

FAS-BG LED BOX

Key features

- Stand-alone system with very compact footprint
- Documentation of agarose gels, protein gels,
- Large touch-screen display with intuitive
- High resolution camera with 8 MPixel

Capture images via the large touchscreen

The touch function allows simple and intuitive operation of the device. View your gels precisely on the large screen and capture gel images with the high resolution 8 MPixel camera. The HDMI port allows to view the display on an external screen.

One imaging system - multiple applications

The Blue/Green LED technology permits the detection of DNA/RNA with highest sensitivtiy and without harming your eyes, skin or your sample. With the white LED array you can image protein gels stained with cooomassie or silver staining. The white LED epiillumination allows the documentation of opaque surfaces such as petri dishes or membranes.

Compact imaging System with Blue/Green LED

The FastGene® FAS-BG LED BOX comes with the advantages of the Blue/Green LED technology combined with a compact footprint. All red and green DNA dyes are easily detectable with this system.

FAS-BG LED BOX

Gel dark box with Blue/Green LED light, white LED light, or white Epi light

Power button

Large screen with touch function

Blue/Green LED light, white light switch

Technical specifications

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

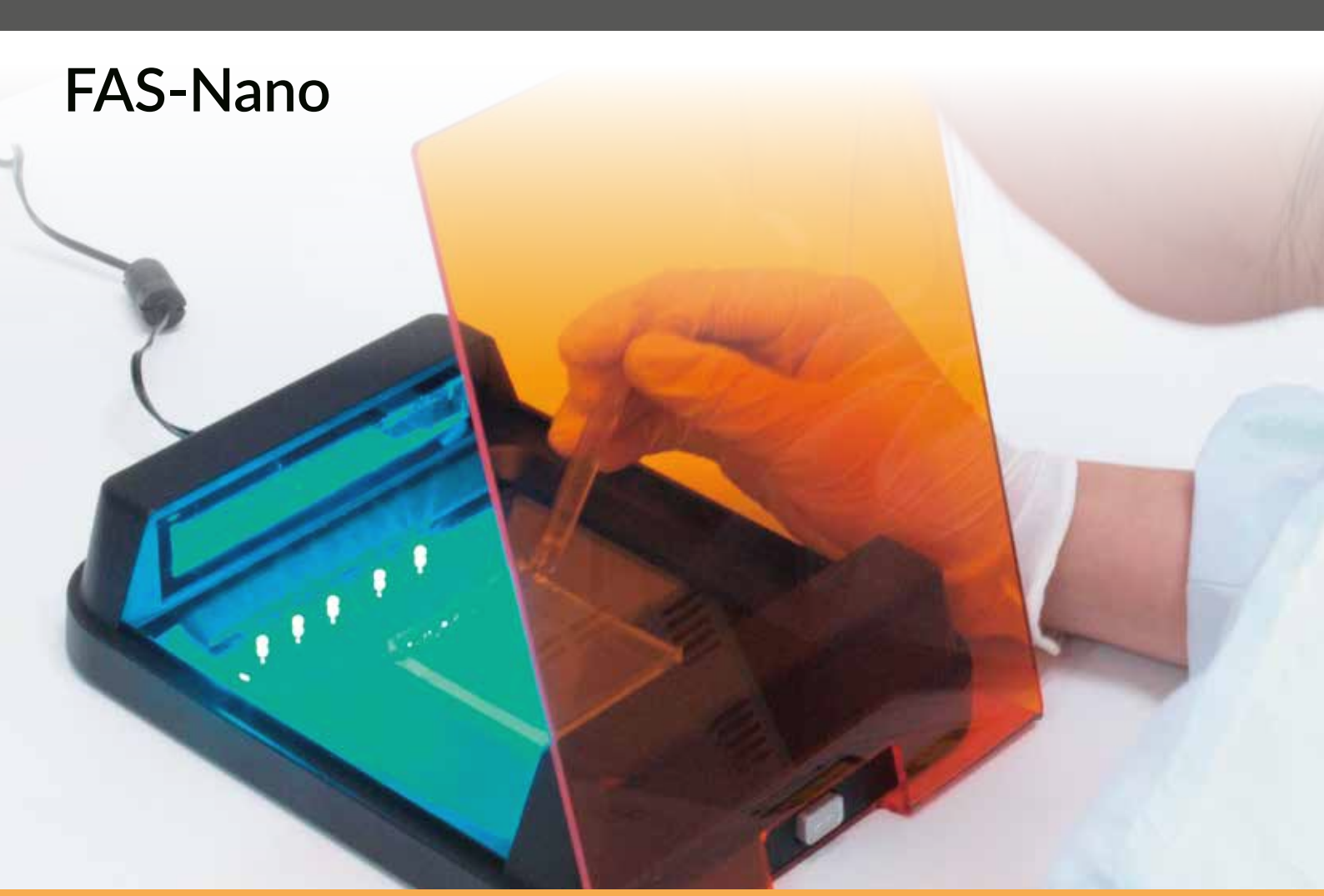
Light source	
Light source	Blue/Green LED transilluminator White LED light transilluminator White Epi light
Transilluminated area	16 cm x 11,5 cm

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

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

Catalog number	
FAS-BG LED BOX	GP-04LED

FAS-Nano



Key features

- Smallest Gel Documentation System
- Use any phone or tablet with a camera
- Blue/Green LED Illuminator with 10 cm x 10 cm
- Compatible for all common DNA stains

Image gels with your phone

The FastGene® FAS-Nano LED system is the most compact gel illumination system on the market. Ideally suited for tight spaces on a bench-top, the system operates both as an illuminator and, if equipped with a smart phone or tablet, a documentation system that captures an image of your gel.

Combine your smartphone with the FAS-Nano and turn the illuminator into a gel documentation system. The recording of the gel image is as easy as taking a picture with your smart device.

The perfect personal illuminator

Its very small footprint and light weight make the FastGene® FAS-Nano a perfect personal illuminator. An array of Blue/Green LEDs positioned around the periphery of the glass plate provide excitation light for both red and green DNA dyes without UV-light damage.

FAS-Nano

Smart device holder

Lens

Amber filter

Filter holder

The FAS-Nano has all the accessories needed to transform your smartphone into a gel documentation system.

Darkhood

You can use your photo app to take pictures of your gels.

Blue/Green
LED Illuminator

The Blue/Green LED technology is able to excite all red and green DNA dyes.

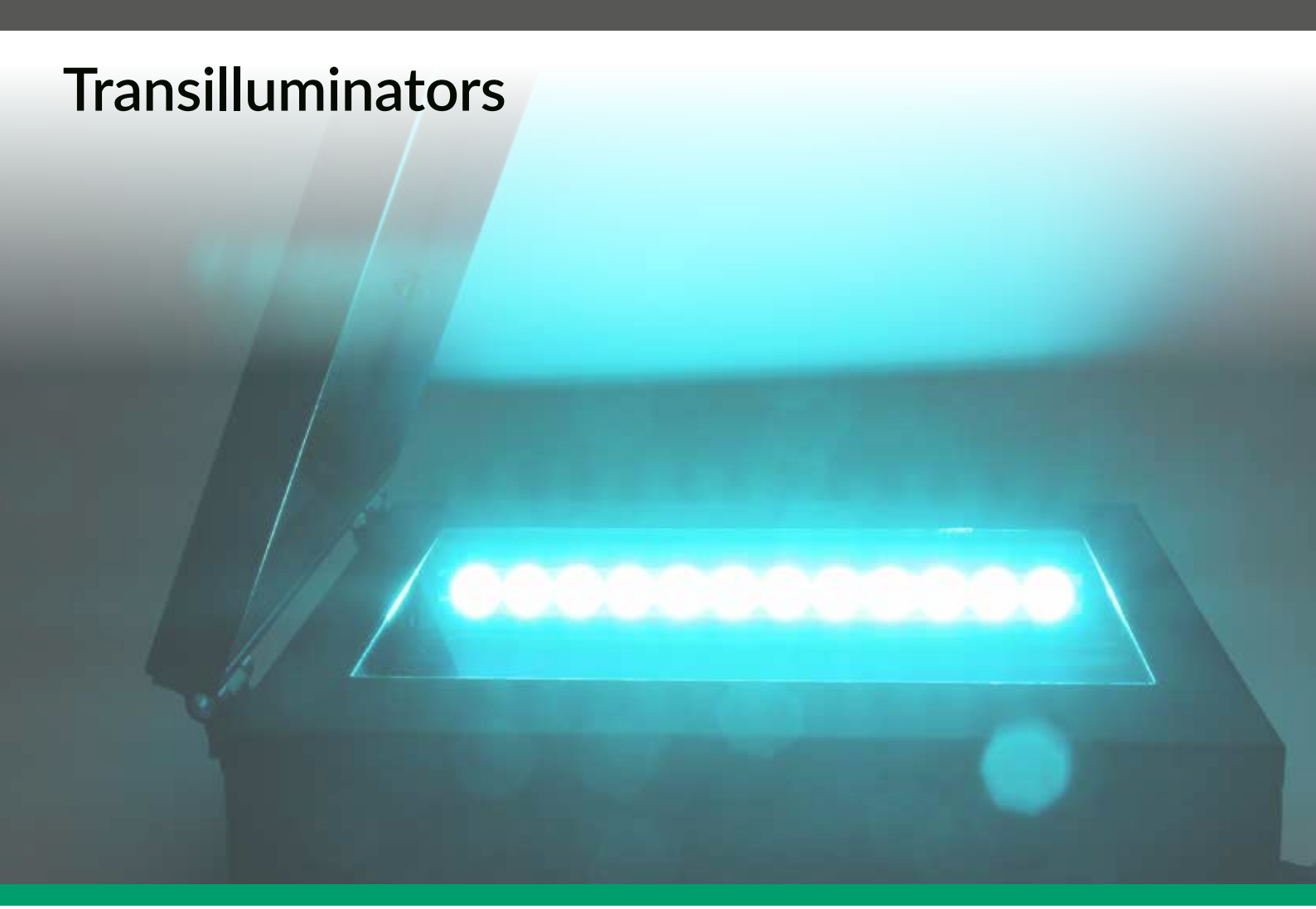
Technical specifications

Light source	
Blue/Green LED light	470 - 520 nm
Imaging area	10 cm x 10 cm

Catalog number	
FAS-Nano	GP-06LED

Footprint	
Dimensions (H x D x W)	12.8 cm x 21.6 cm x 16.8 cm
Weight	1.1 kg
Accessory	Nano Amber Shield

Transilluminators



Key features

- No UV-light and no DNA degradation
- Safe Blue/Green LED or Blue LED light
- Very high life expectancy
- Amber Filter included

Say goodbye to UV Light

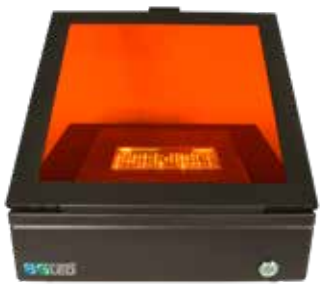
The biggest advantage for using our Green/Blue LED and Blue LED instruments is their safety. Unlike UV-light transilluminators, their safe light will not affect skin and eyes of the user and most importantly, the DNA sample will not be damaged at all. This is especially important if the excised DNA fragment will be used for further cloning experiments.

Excellent life expectancy

Blue/Green LEDs and Blue LEDs transilluminators have a superb efficiency and an extensive average life expectancy of 50,000 hours. Increase your cloning efficiency and eliminate DNA damage by using a safe Blue/Green LED or Blue LED light source.

Blue/Green LED transilluminators

The Blue/Green LED Transilluminators enable safe detection of DNA and RNA in agarose gels They emit light from 470 nm to 520 nm and are compatible with all common green and red DNA dyes, such as MIDORI^{Green} and ethidium bromide.



Using safe light, it becomes extremely simple to cut your DNA fragment out of gels. You don't need to wear protective eyewear, or worry about DNA degredation.

Blue LED transilluminators

Our Blue LED Transilluminators also enable a safe and damage-free detection of nucleic acids. They produce light with a narrow emission peak at ~470 nm, effective for the visualisation of green DNA stains such as MIDORI^{Green} and SYBR®. Blue LEDs are not compatible for the detection of red DNA dyes.

Blue/Green LED Transilluminators

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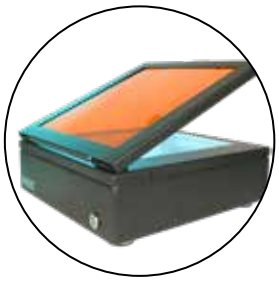
In
Germany



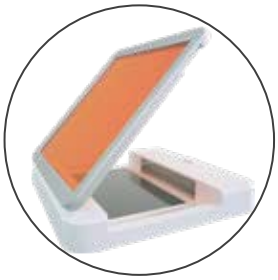
FG-09WS
Blue/Green LED Transilluminator DE

FG-11
Blue/Green LED Flashlight

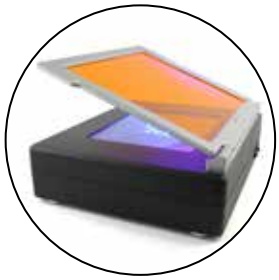
Technical specifications

Cat. No.	FG-09WS	FG-11
Light source	Blue/Green LED (470 - 520 nm)	Blue/Green LED (470 - 520 nm)
Compatible DNA dyes	Green and red dyes	Green and red dyes
Imaging area	21 x 26 cm	n.a.
Dimensions (H x D x W)	12 cm x 32 cm x 32 cm	2.5 cm x 19 cm x 3.9 cm
Weight	4.2 kg	0.17 kg
Power	AC adapter, 2 A	AC adapter, 18 V / 1 A
Filter	Amber filter (~520 nm)	Amber filter (~520 nm)

Blue LED Transilluminators



FG-05
Blue LED Illuminator



FG-06
Blue LED Transilluminator

FG-12
Blue/White LED Tab

Technical specifications

Cat. No.	FG-05	FG-06	FG-12
Light source	Blue LED (470 nm)	Blue LED (470 nm)	Blue LED (470 nm), White light LED
Compatible DNA dyes	Green dyes	Green dyes	Green dyes & Protein stainings
Imaging area	12 x 7 cm	20 x 16 cm	18 x 12 cm
Dimensions (H x D x W)	3 cm x 21 cm x 21 cm	8 cm x 28 cm x 34 cm	30 cm x 18.5 cm x 22 cm
Weight	2.1 kg	3 kg	2.4 kg
Power	24 V, 1.67 A	24 V, 1.67 A	AC adapter 24 V, 1 A
Filter	Amber filter (~520 nm)	Amber filter (~520 nm)	Amber filter (~520 nm)

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