

# Safe Imager™ 2.0 Blue-Light Transilluminator

Cat. nos. G6600, G6600EU, G6600UK

Doc. Part no. 25-1054

Pub. no. MAN0007581

Rev. 3.0

**WARNING!** Before handling, read all applicable Safety Data Sheets (SDSs) at [www.lifetechnologies.com/support](http://www.lifetechnologies.com/support) and ensure that the personal safety equipment you are using is appropriate for the hazards posed by the chemicals that may be present. Use either the Safe Imager™ amber filter unit or Safe Imager™ viewing glasses to prevent prolonged exposure of your eyes to the intense blue light.

## Product description

The Safe Imager™ 2.0 Blue-Light Transilluminator (Fig. 1, A) is designed for viewing stained gels on the laboratory bench top, or within a gel documentation system. The Safe Imager™ 2.0 is supplied with a Safe Imager™ amber filter unit (Fig. 1, B), a power cord (Fig. 1, C), and Safe Imager™ viewing glasses (Fig. 1, D). Light from the LED source inside the transilluminator passes through a blue filter producing a single-intensity signal at approximately 470 nm (Fig. 2), effective for the excitation of SYBR® Safe DNA gel stain, and many other Life Technologies proprietary nucleic acid and protein stains, such as SYBR® Gold, SYBR® Green I and II, SYPRO® Ruby, SYPRO® Orange, and Coomassie Fluor™ Orange stains. Sensitivity obtained using this instrument is comparable to that obtained with a standard UV transilluminator.

Unlike UV-transilluminators, the Safe Imager™ 2.0 Blue-Light Transilluminator does not produce UV light and does not require UV-protective equipment during use.

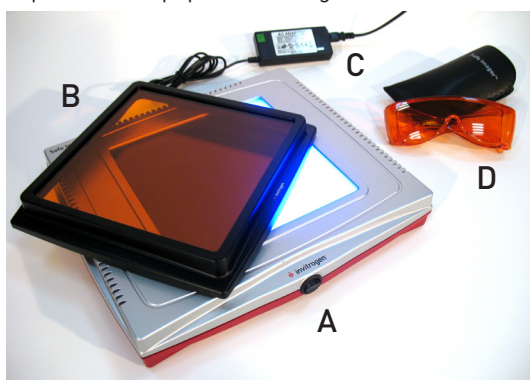


Figure 1. The Safe Imager™ 2.0 Blue-Light Transilluminator.

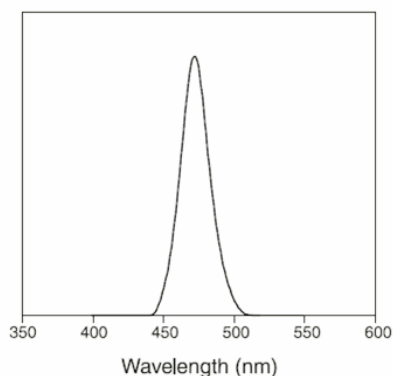


Figure 2. Emission spectrum for the Safe Imager™ 2.0 Blue-Light Transilluminator.



Figure 3. On / Off switch: Red mark is seen when on.

## Operating the Safe Imager™ 2.0 Blue-Light Transilluminator

1. Ensure that the Safe Imager™ 2.0 Blue-Light Transilluminator is placed on a level bench and that there is adequate air circulation around the unit to prevent overheating.
2. Attach the supplied power cord to the Safe Imager™ 2.0 blue-light transilluminator at the back of the device. Plug the other end of the power cord into a properly grounded electrical outlet, ensuring the correct plug adaptor is attached (see Safety Information).  
**Note:** The small footprint of the Safe Imager™ 2.0 blue-light transilluminator may allow it to fit inside the cabinet of your current gel documentation system. An additional adapter is supplied to allow direct connection of the power supply unit to a C14 type cord found in some imaging systems.
3. Place the gel or sample onto the surface of the Safe Imager™ 2.0 Blue-Light Transilluminator.
4. Place the amber filter unit on top of the sample or stained gel. If the gel is larger than the viewing area, rest the amber filter unit directly on top of the gel, or forgo the amber filter unit and rely solely on the viewing glasses.
5. Switch the Safe Imager™ 2.0 transilluminator **ON** using the ON/OFF switch located at the front of the instrument (Fig. 3). DNA stained with blue light-excitable dyes (in solution or in gel bands) are immediately visible after illumination and the amber filter unit or viewing glasses are in position.
6. Use any standard imaging device to document results. Satisfactory results are often obtained by placing the amber filter unit on top of the gel and photographing/imaging as normal.

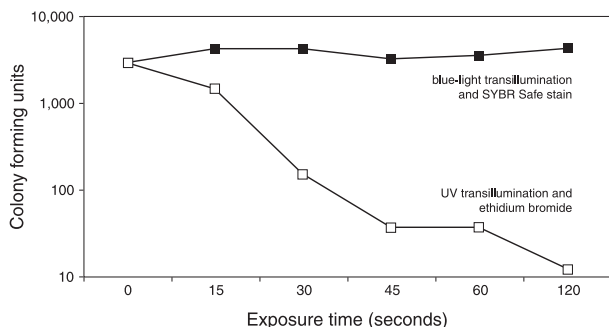
**Note:** The Safe Imager™ 2.0 Blue-Light Transilluminator has a very slim design compared to a UV transilluminator, so the distance between the camera and gel may require adjustment. Also, some CCD documentation systems may include a filter that will work in place of the amber filter unit (contact the manufacturer for filter specifications).

7. Use the viewing glasses when excising bands from DNA gels. The viewing glasses allow the bands to be visualized while leaving the gel surface unobstructed.

**Note:** Blue-light transillumination is ideal for cloning, and results in dramatically increased cloning efficiencies compared to UV transillumination (Fig. 4, page 2).

8. Switch the Safe Imager™ 2.0 Blue-Light Transilluminator off after use.

For research use only. Not for use in diagnostic procedures.



**Figure 4.** Gels loaded with equal amounts of a PCR product (1.25 kb gene fragment from Ultimate™ ORF IOH #11050) were stained following electrophoresis with either SYBR® Safe DNA gel stain (1:10,000 in TBE) or ethidium bromide (0.5 µg/mL in TBE). The gel stained with SYBR® Safe stain was visualized on a blue-light box with light emission identical to that produced by the Safe Imager™ 2.0 blue-light trans-illuminator. The ethidium bromide-stained gel was visualized using UV transillumination. Bands were excised at defined exposure times. DNA was purified from the gel fragments under identical conditions and used in parallel sub-cloning reactions. Following transformation into One Shot® TOP 10 chemically competent bacteria, three serial dilutions were plated and colonies counted using an Alpha Innotech imaging system.

## Safety Information

The Safe Imager™ 2.0 Blue-Light Transilluminator is an electrical device.

- Never touch the power cord or outlet with wet hands.
- Do not use this device in damp areas or while standing on damp floors.
- Do not use the device if a crack is apparent in Safe Imager™ 2.0 illumination or diffuser surface.
- Do not attempt to open the Safe Imager™ 2.0 blue-light transilluminator.

The Safe Imager™ 2.0 Blue-Light Transilluminator is supplied with a power cord suitable for your region. This power cord has a universal transformer compatible with 110 V to 220 V. Only the power cord supplied with the Safe Imager™ Blue-Light Transilluminator should be used to power the device. Always disconnect the Safe Imager™ 2.0 Blue-Light Trans-illuminator from the electrical outlet before cleaning the device.

The Safe Imager™ 2.0 blue-light transilluminator does not produce UV-light. However, the intense blue light emitted by the Safe Imager™ may promote macular degeneration upon prolonged exposure, especially in individuals prone to such problems (e.g. older individuals or those with fair complexion and blue eyes or nutritional or endocrine defects). Use the Safe Imager™ amber filter unit or Safe Imager™ viewing glasses provided with this device to protect your eyes. The amber filter unit and viewing glasses are for viewing stained gels using the Safe Imager™ 2.0 Blue-Light Transilluminator.

**Note:** The amber filter unit and viewing glasses are NOT designed as protection for UV emission, and will NOT protect your eyes when viewing gels on UV transilluminators.

Do not leave the Safe Imager™ 2.0 Blue-Light Transilluminator switched on for extended periods of time. After viewing and documenting the gel or sample, always switch the unit off. Refer to the E-Gel® Technical Guide for explanation of symbols and, warnings including **WEEE** and caution labels. Leaving the Safe Imager™ 2.0 switched **ON** for an extended time, particularly in a non-ventilated environment, can lead to internal overheating, and activation of an automatic temperature control circuit, that will shut off the illumination. The illumination is restored automatically after the unit has cooled by ~10°C. If the cooling process has begun, switching the unit **OFF** and then **ON** can shorten the time needed to restore illumination.

## Instrument Specifications

- **Viewing surface dimensions:** 190 × 190 mm (7.5 × 7.5 in)
- **LED life:** 50,000 hours
- The Safe Imager™ 2.0 Blue-Light Transilluminator complies with the European Community Safety requirements.
- **Overall dimensions:** 295 × 325 × 65 mm (11.6 × 12.8 × 2.6 in)
- **Included accessories:** amber filter unit and viewing glasses
- This device contains Class 1 LED products.

## Accessory Products

The Safe Imager™ Blue-Light Transilluminator can be used for the visualization of E-Gel® Products containing blue light-excitable stains:

Product	Quantity	Cat. No.
Safe Imager™ viewing glasses	1 each	S37103
SYBR® Safe DNA Gel Stain, 10,000X concentrate	400 µL	S33102
E-Gel® EX Gel, 1%	10 gels	G4010-01
E-Gel® EX Gel, 2%	10 gels	G4010-02
E-Gel® SizeSelect™ 2% Agarose Gels	10 gels	G6610-02
E-Gel® 1.2% with SYBR® Safe	18 gels	G5218-01
E-Gel® 2% with SYBR® Safe	18 gels	G5218-02
E-Gel® 96 2% with SYBR® Safe	8 gels	G7208-02
E-Gel® CloneWell™ 0.8% SYBR® Safe Gels	18 gels	G6618-08

### Limited Product Warranty

Life Technologies Corporation and/or its affiliate(s) warrant their products as set forth in the Life Technologies' General Terms and Conditions of Sale found on Life Technologies' website at [www.lifetechnologies.com/termsandconditions](http://www.lifetechnologies.com/termsandconditions). If you have any questions, please contact Life Technologies at [www.lifetechnologies.com/support](http://www.lifetechnologies.com/support).

© 2012 Life Technologies Corporation. All rights reserved. The trademarks mentioned herein are the property of Life Technologies Corporation and/or its affiliate(s) or their respective owners.

**DISCLAIMER** - LIFE TECHNOLOGIES CORPORATION AND/OR ITS AFFILIATE(S) DISCLAIM ALL WARRANTIES WITH RESPECT TO THIS DOCUMENT, EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THOSE OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR NON-INFRINGEMENT. TO THE EXTENT ALLOWED BY LAW, IN NO EVENT SHALL LIFE TECHNOLOGIES AND/OR ITS AFFILIATE(S) BE LIABLE, WHETHER IN CONTRACT, TORT, WARRANTY, OR UNDER ANY STATUTE OR ON ANY OTHER BASIS FOR SPECIAL, INCIDENTAL, INDIRECT, PUNITIVE, MULTIPLE OR CONSEQUENTIAL DAMAGES IN CONNECTION WITH OR ARISING FROM THIS DOCUMENT, INCLUDING BUT NOT LIMITED TO THE USE THEREOF.

## Headquarters

5791 Van Allen Way | Carlsbad, CA 92008 USA | Phone +1 760 603 7200 | Toll Free in USA 800 955 6288

For support visit [lifetechnologies.com/support](http://lifetechnologies.com/support) or email [techsupport@lifetech.com](mailto:techsupport@lifetech.com)

[lifetechnologies.com](http://lifetechnologies.com)

10 December 2012

