Stratys™ System Safety Guide

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CG-00023

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A

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bionano

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Revision History

REVISION	NOTES
1	Initial release.
A	Revised to include Stratys Compute and Instrument Controller

Stratys System Safety Guide

This guide provides important safety information pertaining to the installation, servicing, and operation of the Stratys™ System (P/N 60534). Read this document before performing any procedures on the system. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

IMPORTANT: Users must read the *Stratys Site Preparation Guide* (CG-00056) and the *Stratys System User Guide* (CG-00041) before plugging the instrument into the power supply. Before installation day, it is recommended that users familiarize themselves with the relevant safety and installation instructions provided in the documents shown in **Table 1**.

These documents contain information and warnings that must be followed by the customer for safe operation and for keeping the product in a safe condition. Before using the instrument, please review all safety instructions to avoid injury and prevent damage to this instrument and any products connected to it.

The following documents are available for download from www.bionano.com.

Table 1. Document Resources

Resource	Description
Site Preparation Guide	Provides specifications for laboratory space, electrical requirements, and environmental considerations.
Stratys System User Guide	Provides an overview of instrument components and software, proper maintenance, and troubleshooting.
Bionano Access™ Software Guide	Provides an overview of data analysis.

Safety Warnings

Make sure that all personnel are trained in the correct operation of the instrument and are aware of any potential safety considerations (**Table 2**).

Table 2. Safety Warnings

Type	Description
	Hazard: Indicates a potential electrical shock hazard that may lead to personal injury
	Hazard: Indicates a potential laser exposure hazard that may lead to personal injury

Laser Safety Warnings

The Stratys system has a laser system classification of a Class 1 product per the U.S. Federal Performance Standard for Laser Products requirements described in 21 CFR Subchapter J. The system uses embedded Class 3B and Class 4 lasers. The Stratys System is certified to the IEC/EN 60825-1:2014 standards.

The nominal wavelength outputs include the following optical power:

- 500 mW (532 nm)
- 400 mW (488 nm)
- 90 mW (785 nm)
- 180 mW (1650 nm)

A Class 1 laser product is safe under all conditions of normal use.

A Class 4 laser product is hazardous if the eye is directly exposed to the laser. However, the diffuse reflections are not harmful. Protective eye wear is required when a person is viewing a class 3B or class 4 laser beam. All Class 4 lasers must be equipped with a key switch and a safety interlock.

Preventing Radiation Exposure

- There is a risk of radiation exposure from the direct or reflected laser light if the instrument is operated with any panels removed.
- Exposure to hazardous radiation exists if controls are used or adjustments are made that are not specified in this Stratys Safety Guide.

CAUTION: Only authorized Bionano personnel can remove instrument panels.

Sound Level Safety Warnings

The instrument produces sounds when operated. All noise is under 85 dBA, which is the OSHA limit for safety.

LED Exposure Warning

Do not gaze at the light-emitting diodes (LED) on the front of the instrument for an extended period. Exposure to high-intensity LED may increase the risk of vision impairment and discomfort.

Electrical Safety Warnings

- Do not remove the outer panels from the instrument. Operating the instrument without all the panels creates potential exposure to hazardous AC and DC voltages.
- For protection against electrical shock hazard, the instrument must be plugged into a three-wired grounded receptacle.
- Do not attach the power cord to an extension cord or to a multiple portable socket.
- Do not connect the instrument to anything.
- Do not open the sample door when the instrument power is on, as this could expose potential hazards.
- Only Bionano Field Service Engineers or Bionano certified personnel are qualified to replace the internal fuses. The power entry module includes two input fuses on the high-voltage input lines.
- Under no circumstances should the user modify the safety features of this instrument.

ELECTRICAL SPECIFICATIONS

Table 3. Electrical Specifications

Type	Specification
Line Voltage	100–240 VAC at 50/60 Hz
Power Consumption (instrument, instrument controller, and monitor)	≤ 2000 Watt
Power Connector	The instrument is shipped with only power cords for North America. The necessary power cords required for all other countries are provided at set-up.

Uncrating, Installing and Moving the Instrument

CAUTION: Only authorized Bionano personnel can uncrate and install the instrument.

The instrument is heavy and can cause serious injury if dropped or mishandled. Make sure there are three people to assist the Field Service Engineer with lifting the Stratys instrument from the crate. Ensure that power outlets powering the instrument are easily accessible and free of any obstructions.

- Significant risks to optical and mechanical alignment can occur if the instrument is moved.

- Ensure the instrument is installed on a clean, sturdy, level, bench without exposure to direct sunlight or heat sources.
- Do not set the instrument up where liquid or chemicals are used. Ensure that no liquids spill into the instrument.
- Do not operate the instrument in the presence of flammable gases or fumes.

DIMENSIONS

Table 4. Instrument Measurements

Measurement	Instrument
Height	74 cm (29 in.)
Width	58 cm (23 in.)
Depth	74 cm (29 in.)
Weight	73 kg (160 lbs.)

Environmental Considerations

This instrument is designed for indoor use only.

Table 5. Environmental Considerations

Element	Specification
Temperature	Maintain a lab temperature of 19°C (66°F) to 25°C (77°F).
Humidity	Maintain a noncondensing relative humidity between 20–80%.
Elevation	The instrument may only be operated at a location where the elevation is 2,000m (6,500 ft) or less above mean sea-level.
Ventilation	Provide at least 5 cm (2 in) of clearance behind the instrument to allow sufficient ventilation and access to instrument power connection. Overhead clearance required for installation and service is 93 cm (37 inch).
Air Quality	Operate the instrument in a Pollution Degree II environment or better.

Stratys Instrument Controller and Stratys Compute

Setting Up the Computers

CAUTION: Only authorized Bionano personnel can unbox and install the computers or provide any service to the computers.

Computers may weigh more than 40 pounds. Use caution when lifting or moving them. Lift heavy objects with legs bent while keeping the back straight.

- Never move the computers with the power cord connected.

Electrical Considerations

Table 6. Electrical Specifications

Type	Specification
Line Voltage	100–240 VAC at 50/60 Hz
Power Consumption (instrument, instrument controller, and monitor)	≤ 2000 Watt
Power Connector	The computers are shipped with only power cords for North America. The necessary power cords required for all other countries are provided at installation.

- Never operate computers with panels or covers removed.
- Use properly grounded power cords with three-pronged outlets to supply power to user computers.
- The socket-outlet must be installed near the computer and shall be easily accessible.
- Do not use liquids around your equipment.
- Place the computers in a well-ventilated area where the vents are free from obstruction.
- Using the product power switch does not guarantee that the power is off or that power is not supplied to the computer.

Table 7. Safety warnings

Type	Description
	Hazard: Indicates a potential electrical shock hazard that may lead to personal injury
	No user serviceable parts
	Caution, hot surface

Technical Assistance

For technical assistance, contact Bionano Technical Support.

You can retrieve documentation on Bionano products, SDS's, certificates of analysis, frequently asked questions, and other related documents from the Support website or by request through e-mail and telephone.

TYPE	CONTACT
Email	support@bionano.com
Phone	Hours of Operation: Monday through Friday, 9:00 a.m. to 5:00 p.m., PST US: +1 (858) 888-7663 Monday through Friday, 9:00 a.m. to 5:00 p.m., CET UK: +44 115 654 8660 France: +33 5 37 10 00 77 Belgium: +32 10 39 71 00
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