



# Stratys™ Site Preparation Guide

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## Revision History

REVISION	NOTES
1	Initial release.
2	Changed power consumption in Stratys Instrument Controller Table Made changes to Table 2: External Firewall Requirements: services Adjusted formatting of document
A	Revised for Stratys Launch

# Introduction

This document provides guidelines and specifications to prepare the user site for installation and operation of the Bionano Stratys™ System. Please review the information in this guide before preparing the user site. Authorized Bionano personnel will assist users through the installation and sample preparation process.

**The site preparation process has four stages:**

Preparation Stage	Description
Planning	<ul style="list-style-type: none"><li>• Hardware and software requirements</li><li>• Network, file storage, and electrical requirements</li><li>• Coordination of requirements between the research team, IT Operations, security groups, and any other governance parties.</li><li>• User-supplied materials and equipment</li></ul>
Preparing for Instrument Arrival	<ul style="list-style-type: none"><li>• Installation guidelines</li><li>• Laboratory guidelines</li><li>• Environmental considerations</li></ul>
Preparing for Installation and Training	<ul style="list-style-type: none"><li>• Site preparation checklists</li><li>• Crate contents</li><li>• Accessory and Qualification kits</li><li>• Installation and training schedule</li></ul>
Post Installation Follow-Up	<ul style="list-style-type: none"><li>• Preparing for follow-up review</li></ul>

The following roles and responsibilities must be followed to ensure a successful installation:

Role	Responsibility
Bionano Genomics Field Service Engineer (FSE)	<ul style="list-style-type: none"> <li>• Coordinate installation date with the customer</li> <li>• Perform full installation and qualification of Stratys System (Instrument and Access Server).</li> </ul>
Bionano Genomics Field Application Scientist (FAS)	<ul style="list-style-type: none"> <li>• Act as customer point of contact.</li> <li>• Coordinate training date with the customer.</li> <li>• Arrange to send training consumables to the customer and ensure that they have arrived.</li> <li>• Train the customer in sample preparation, running the instrument, and reviewing data output.</li> </ul>
Customer	<ul style="list-style-type: none"> <li>• Ensure that all requirements listed in this document are met.</li> <li>• Provide all user-supplied materials listed in this document.</li> </ul>
IT at Customer Site	<ul style="list-style-type: none"> <li>• Provide static IP addresses as described in this document.</li> <li>• Configure network firewall ahead of installation time</li> <li>• Provide an SSL certificate for the Bionano Access® Server</li> <li>• Install VIA Client on identified user's workstations</li> </ul>

## Planning

The planning stage provides guidelines for configuration, network security, and file storage. These guidelines explain the required infrastructure for a successful implementation of the Stratys system within the user organization.

Successful planning requires a comprehensive coordination between all relevant parties at the site, such as the research team, IT Operations, security groups, and any other governance parties. It is essential to involve compliance teams in the process as early as possible to ensure efficient installation.

### Hardware requirements and specifications

#### STRATYS INSTRUMENT

Type	Requirements/Specifications
Physical	<ul style="list-style-type: none"><li>• Height: 74 cm (29 in)</li><li>• Width: 58 cm (23 in)</li><li>• Depth: 74 cm (29 in)</li><li>• Weight: 73kg (160lb)</li></ul>
Power	<ul style="list-style-type: none"><li>• 100-240 VAC at 50-60 Hertz</li><li>• Power Consumption ≤ 300 Watts</li><li>• 2m long, IEC 60320-C13 power cord</li></ul>

## STRATYS INSTRUMENT CONTROLLER (INCLUDED WITH INSTRUMENT)

The Instrument Controller is designed to be located adjacent to the Stratys Instrument. The two systems are directly tethered for controlling the instrument and direct data transfer of image files.

Type	Requirements/Specifications
Accessories	<ul style="list-style-type: none"> <li>• Mouse and keyboard</li> <li>• Monitor (see below)</li> </ul>
Operating System	<ul style="list-style-type: none"> <li>• Windows 10 IoT Enterprise LTSC 2021 2009 x64</li> </ul>
Software	<ul style="list-style-type: none"> <li>• Stratys Instrument Controller Software (ICS)</li> <li>• TeamViewer (remote assistance, optional)</li> <li>• Microsoft Edge (not user accessible, service only)</li> </ul>
Memory	<ul style="list-style-type: none"> <li>• 64GB RAM</li> </ul>
Compute	<ul style="list-style-type: none"> <li>• NVIDIA RTX 6000 48GB Ada</li> <li>• AMD Epyc CPU</li> </ul>
Data Storage	<ul style="list-style-type: none"> <li>• 1TB SSD OS</li> <li>• 4TB SSD Data</li> </ul>
Space	<ul style="list-style-type: none"> <li>• Height: 46 cm (18 in)</li> <li>• Depth: 56.4 cm (20.2 in)</li> <li>• Width: 18 cm (7 in)</li> <li>• Weight: 40lbs</li> </ul>
Power	<ul style="list-style-type: none"> <li>• 100-240 VAC at 50-60 Hertz</li> <li>• Power Consumption 1000 Watts</li> <li>• 2m long, IEC 60320-C19 power cord</li> </ul>
Network	<ul style="list-style-type: none"> <li>• 2x – 10 gigabit ethernets ports</li> <li>Port 1 (required): connected to the Bionano Access Server</li> <li>Port 2 (recommended): connected to customer network at <math>\geq 1</math> GB, to provide support capabilities to the Stratys System</li> </ul>
Monitor	<ul style="list-style-type: none"> <li>• 25", width: 57 cm (22.4 in)</li> <li>• Power Consumption: 22W</li> <li>• 100-240V at 50-60 Hertz</li> <li>• 2m long, IEC 60320-C13 power cord</li> </ul>



## BIONANO ACCESS SERVER (INCLUDED WITH INSTRUMENT)

The webserver is designed to be located adjacent to the Stratys Instrument Controller. The two systems are directly tethered for direct data transfer.

Type	Requirements/Specifications
Accessories	<ul style="list-style-type: none"> <li>None</li> </ul>
Software	<ul style="list-style-type: none"> <li>CentOS 7.x</li> <li>Bionano Access</li> <li>Bionano Solve</li> <li>PostgresSQL</li> <li>Nodejs</li> <li>Perl</li> <li>Python</li> <li>R</li> <li>Docker</li> <li>VIA</li> </ul>
Memory	<ul style="list-style-type: none"> <li>128GB RAM</li> </ul>
Data Storage	<ul style="list-style-type: none"> <li>4x 16TB with RAID Controller</li> </ul>
Space	<ul style="list-style-type: none"> <li>Height: 46 cm (18 in)</li> <li>Width: 18 cm (7 in)</li> <li>Depth: 47 cm (18.5 in)</li> </ul>
Power	<ul style="list-style-type: none"> <li>100-240 VAC at 50-60 Hertz</li> <li>Power Consumption <math>\leq</math> 300 Watts</li> <li>2m long, IEC 60320-C13 power cord</li> </ul>
Network	<ul style="list-style-type: none"> <li>3x – 10 gigabit ethernet ports               <ul style="list-style-type: none"> <li>Port 1 (required): directly tethered to the Instrument Controller at 10 GB</li> <li>Port 2 (required): directly tethered to the Stratys Compute at 10 GB</li> <li>Port 3 (required): connected to customer network at <math>\geq</math> 1 GB</li> </ul> </li> </ul>

## STRATYS COMPUTE (INCLUDED WITH INSTRUMENT BUNDLE)

The Strays Compute requires a direct network connection to the Bionano Access Server (BAS). Stratys Compute is not accessible on the customer network.

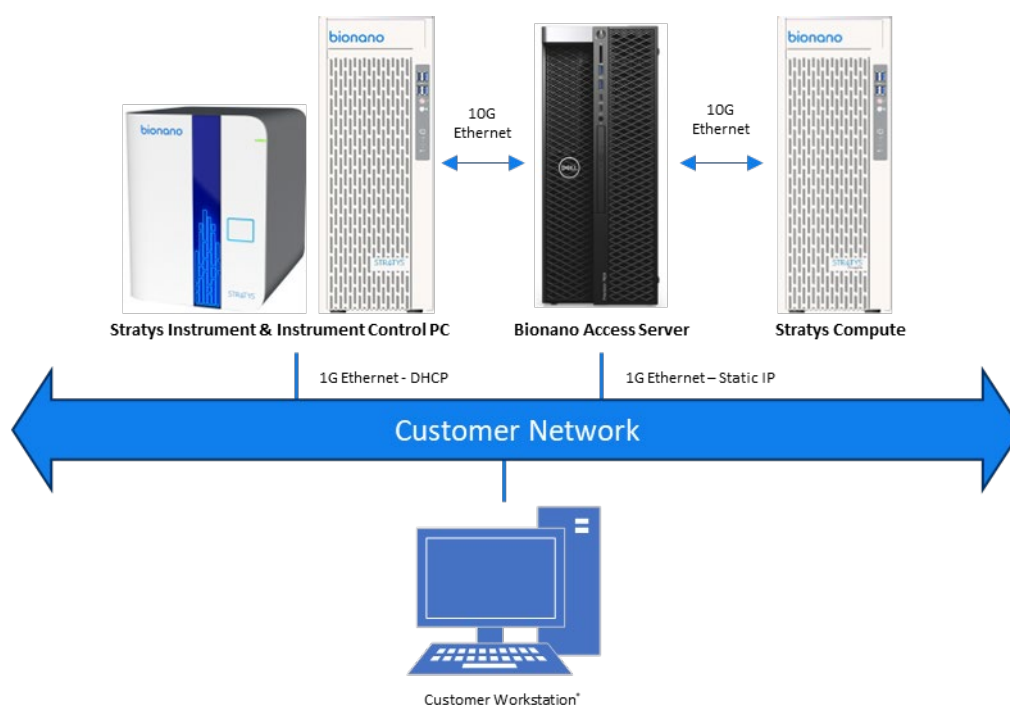
Bionano Support personnel will configure the network for all Bionano systems during installation.

The Bionano Access Server and Stratys Compute are designed to be located adjacent to the Stratys Instrument Controller. The systems are tethered for direct data transfer.

Type	Requirements/Specifications
Accessories	<ul style="list-style-type: none"> <li>None</li> </ul>
Software	<ul style="list-style-type: none"> <li>RedHat v9.0</li> <li>Bionano Solve</li> <li>Singularity</li> <li>Slurm</li> </ul>
Memory	<ul style="list-style-type: none"> <li>256 GB</li> </ul>
Processing	<ul style="list-style-type: none"> <li>AMD Epyc CPU</li> <li>3x NVIDIA RTX 6000 Ada GPU</li> </ul>
Data Storage	<ul style="list-style-type: none"> <li>1TB SSD – Operating system</li> <li>4TB SSD - Application work drive</li> </ul>
Space	<ul style="list-style-type: none"> <li>Height: 46 cm (18 in)</li> <li>Width: 18 cm (7 in)</li> <li>Depth: 47 cm (18.5 in)</li> <li>Weight: Approx 40lbs</li> </ul>
Power	<ul style="list-style-type: none"> <li>100-240 VAC at 50-60hz</li> <li>Power consumption 1200 watts</li> <li>2m long, IEC 60320-C19 power cord</li> </ul>
Network	<ul style="list-style-type: none"> <li>1x – 10 gigabit ethernet ports</li> <li>Port 1 (required): directly tethered to the Bionano Access Server at 10 GB</li> </ul>

## Network overview

**Figure 1** depicts the Stratys system connectivity path. The Stratys Instrument captures images of labeled DNA molecules from the Stratys Chip. The Instrument Controller (which controls the function of the Stratys Instrument) converts the images into molecule data files (.bnx) and computes real-time throughput, molecule N50, label density values, and molecule quality metrics. The .bnx files are transferred to the Bionano Access Server, where mapping metrics are displayed in the Instrument Control Software (ICS) and Bionano Access dashboards. Once the chip run is complete, the completed molecule data files are automatically imported into the Bionano Access web application (hosted at the Bionano Access Server). The molecule data files can then be used to perform various bioinformatics. Stratys Compute processes bioinformatics jobs submitted to the Bionano Access web application. Bionano also offers cloud-based computing (Bionano Compute On Demand) which can be used in place of local Compute servers or to augment local Compute resources during computational peak periods. The Bionano Access web application monitors the progress of each computation job, captures the output, notifies the user of completion, and allows them to inspect the results in their browser on the Customer Workstation. Bionano Compute On Demand, a pay-per-use computing service, is accessible through the Bionano Access Server, for computation needs.



**Figure 1.** Stratys System Connectivity Diagram  
\* User-Provided

## Network requirements

The components in the Stratys system require network connectivity to communicate with each other. Poor network reliability or throughput can affect the performance of your Stratys system.

Bionano Access is installed on the Bionano Access Server and is accessible via standard web browsers from workstations connected to the same network. Users can perform various activities, such as generating experiments, monitoring instruments, run status, and performing and sharing analyses (when properly configured with Bionano computation servers), by logging into Bionano Access via a web browser. Our recommended web browser is Chrome.

NOTE: VIA Client should be installed on a user’s workstation prior to analysis training (refer to the VIA Client Installation section of the *Bionano VIA Installation Guide* (CG-00044)).

The Bionano Access Server has a tethered connection to the Stratys Instrument Controller.

### Firewall requirements

The Saphyr® system requires access to the ports and URLs seen in **Table 1**, **Table 2** and **Table 3**, which enable Bionano Assure, TeamViewer, Windows Update Services and connectivity between the ICS Controller, BAS, and Compute Server/s if applicable.

**Table 1.** Internal Firewall Requirements

From System	To Service	Ports (outbound)	URL (outbound)
Users Workstations	Bionano Access Server	TCP: 3005	http://<ipaddress BAS> <sup>1</sup>
		SSH: 22	https://<ipaddress BAS> <sup>1</sup>
	VIA (Client to be installed)	TCP: 8443 (default)	https://<ipaddress BAS> <sup>1</sup>

<sup>1</sup> Bionano Access Server and Bionano Compute Servers Static IP addresses to be provided by local IT administrators

## EXTERNAL FIREWALL REQUIREMENTS: SERVICES

**Table 2:** External Firewall Requirements: services

From System	To Service	Ports (outbound)	URL (outbound)
	Bionano Assure	TCP: 80, 443 (SSL)	<a href="https://api-assure.bionano.com">https://api-assure.bionano.com</a> <a href="https://sabionanoassure.blob.core.windows.net">https://sabionanoassure.blob.core.windows.net</a> <a href="http://windowsupdate.microsoft.com">http://windowsupdate.microsoft.com</a> <a href="http://*.windowsupdate.microsoft.com">http://*.windowsupdate.microsoft.com</a> <a href="https://*.windowsupdate.microsoft.com">https://*.windowsupdate.microsoft.com</a> <a href="http://*.update.microsoft.com">http://*.update.microsoft.com</a> <a href="https://msedge.api.cdp.microsoft.com">https://msedge.api.cdp.microsoft.com</a> <a href="http://*.windowsupdate.com">http://*.windowsupdate.com</a> <a href="http://download.windowsupdate.com">http://download.windowsupdate.com</a> <a href="https://download.microsoft.com">https://download.microsoft.com</a> <a href="http://*.download.windowsupdate.com">http://*.download.windowsupdate.com</a> <a href="http://wustat.windows.com">http://wustat.windows.com</a> <a href="http://ntservicepack.microsoft.com">http://ntservicepack.microsoft.com</a> <a href="http://go.microsoft.com">http://go.microsoft.com</a> <a href="http://*.dl.delivery.mp.microsoft.com">http://*.dl.delivery.mp.microsoft.com</a> <a href="https://*.dl.delivery.mp.microsoft.com">https://*.dl.delivery.mp.microsoft.com</a> <a href="http://dl.delivery.mp.microsoft.com">http://dl.delivery.mp.microsoft.com</a> <a href="https://dl.delivery.mp.microsoft.com">https://dl.delivery.mp.microsoft.com</a>
Instrument Controller	Windows Update <sup>2</sup>	TCP: 80, 443	<a href="http://*.teamviewer.com">http://*.teamviewer.com</a> <a href="https://*.teamviewer.com">https://*.teamviewer.com</a>
	TeamViewer	TCP/UDP: 5938 TCP: 443, 80	<a href="http://*.teamviewer.com">http://*.teamviewer.com</a> <a href="https://*.teamviewer.com">https://*.teamviewer.com</a>
	Users emailing <sup>3</sup>	SMTP: 587	<a href="mailto:email-smtp.us-west-2.amazonaws.com">email-smtp.us-west-2.amazonaws.com</a>
	Bionano Assure	TCP: 3000	<a href="https://*.bionanostratus.com">https://*.bionanostratus.com</a>
		TCP: 3000, 3001	<a href="https://*.bionanostratus.com">https://*.bionanostratus.com</a>
Bionano Access Server	Compute On Demand	TCP: 443	<a href="http://*.bionanostratus.com">http://*.bionanostratus.com</a> <a href="https://platform.rescale.com">https://platform.rescale.com</a> <a href="https://*.amazonaws.com">https://*.amazonaws.com</a>
	TeamViewer	TCP/UDP: 5938 TCP: 443, 80	<a href="http://*.teamviewer.com">http://*.teamviewer.com</a> <a href="https://*.teamviewer.com">https://*.teamviewer.com</a>

<sup>2</sup> [Windows Server Update Services \(Configure WSUS\)](#)

<sup>3</sup> Users notification emailing service.

## EXTERNAL FIREWALL REQUIREMENTS: SERVER UPDATE

**Table 3:** External Firewall Requirements: Server Update

From System	To Service	Ports (outbound)	URL (outbound)
Bionano Access Server	internet	temporary opening allowing planned update to be rolled out	

## **BACKUP REQUIREMENTS**

The Stratys solution does not come with backup capabilities. Typically, customers already have enterprise level backup solutions so it would be redundant. Customers should determine their backup needs and arrange to back up the Bionano Access Server on a regular basis. The Bionano Access Server is the only system that has long term storage for data generated from Stratys system. The Bionano Access Server has approximately 40TB of storage total and could see daily file growth up to 60-240GB per day depending on chip runs and analysis performed.

## **FILE STORAGE RECOMMENDATIONS**

The Bionano Access Server will store result files such as molecule data files (BNX) and *de novo* assemblies. This data will continue to grow over time. The Bionano Access Server has been configured to have sufficient file storage for several years. We highly recommend that all content in the Access Installation folder is backed up on a regular basis. Depending on system utilization you may need to transition to an enterprise storage solution if you exceed the capacity of the Bionano Access Server. Alternatively, users can export and archive unused projects periodically. See [Bionano Access User Guide](#) (CG-30142) for details.

## **User-supplied materials**

The following user-supplied materials are required for all types of sample preparation training. Additional, protocol-specific materials are referred to on subsequent pages. Confirm with your FAS when you have all the corresponding consumables and equipment available before scheduling your training.

## USER-SUPPLIED EQUIPMENT

Equipment	Supplier	Catalog #
HulaMixer Sample Mixer	Thermo Fisher	15920D
Qubit Fluorometer	Thermo Fisher	Q33216 or similar
Microcentrifuge, refrigerated	General lab supplier	
Pipettes (2, 10, 20, 200, and 1000 µl) Note: light touch pipettes are not compatible	General lab supplier	
Ice bucket and ice	General lab supplier	
Mini Benchtop Microcentrifuge (2,200 x g spin)	Cole-Parmer or equivalent	EW-17701-11
Vortexer	VWR or equivalent	10153-838
Thermal Cycler with Heated Lid (10 °C above block temp.)	General lab supplier	
4 °C refrigerator and -20 °C freezer	General lab supplier	
-20 °C Enzyme Block	General lab Supplier	
4 °C Aluminum Cooling Block for tubes (optional)	Sigma Aldrich	Z740270 or similar
Forceps, pointed and curved	Electronic Microscopy Sciences or equivalent	78141-01
Positive-displacement pipette MR-10 (recommended)	Rainin	17008575 or similar
Bath Sonicator (optional)	General lab supplier	
Vari-Mix Test Tube Rocker (Blood & BMA workflows only)	VWR or equivalent	10159-754
Dynamag-2 Magnetic Tube Rack*	Thermo Fisher	12321D
HemoCue WBC Analyzer* (Blood & BMA workflows only)	Fisher Scientific (for US) Distributor ( <a href="#">outside US</a> )	22-601-017
HemoCue Microcuvettes* (Blood & BMA workflows only)	Fisher Scientific	22-601-018
-80 °C freezer	General lab supplier	
Water Bath, 37°C (Frozen blood & BMA workflows only)	General lab supplier	
Thermomixer, 55°C (alternatives: Heat Block or Water bath)	Eppendorf or Equivalent	5382000023
Cryopreservation Box (for 1.5 ml microcentrifuge tubes)	General Lab Supplier	

## USER-SUPPLIED CONSUMABLES

Consumable	Supplier	Catalog #
PCR tubes, thin-walled, flat cap, DNase-free, 0.2 ml	Thermo Fisher	AM12225 or similar
Qubit Broad Range (BR) dsDNA Assay Kit	Thermo Fisher	Q32853
Qubit High Sensitivity (HS) dsDNA Kit (recommended)	Thermo Fisher	Q32851
Qubit Assay Tubes	Thermo Fisher or Axygen	Q32856 or 10011-830
UltraPure nuclease-free water	Thermo Fisher	10977015
Microcentrifuge tubes, 0.5ml, amber, nuclease-free	USA Scientific	1605-0007
Microcentrifuge tubes, 1.5 ml	VWR	87003-294
Microcentrifuge Tubes, 2.0 ml, Nuclease Free	Fisher Scientific or Equivalent	05-408-138
Microcentrifuge Tube, 5.0 ml, Nuclease Free	Thomas Scientific or Equivalent	1201T80
Pipette tips, aerosol-resistant 2, 10, 20, 200, and 1000 µl	General lab supplier	
Pipette tips, wide bore, filtered, 200 ul	USA Scientific equivalent	1011-8810
Pipette tips, unfiltered, 200 ul	USA Scientific or equivalent	1111-1810
Pipette tips, 10 µl, C-10 for pos. displacement (recommended)	Rainin	17008604
Extra Long 1000 ul Tips, Sterile	VWR or equivalent	76322-154
Conical Centrifuge Tubes, 50 mL, PP	Fisher Scientific	14-432-22
Conical Centrifuge Tubes, 15 ml, PP	Fisher Scientific	05-539-12
Ethanol, 200 Proof, Molecular Biology Grade	Sigma-Aldrich	E7023
Disinfectant Concentrate, TexQ TX651**	Texwipe	TX651
Bleach for Disposal of Blood/Cell Media	General Lab Supplier	
Isopropanol (IPA), ≥ 99.5%, Molecular Biology Grade	Fisher Scientific	A461-212 (new part number 327270010)
Parafilm	General Lab Supplier	
Sterile 5- and 10-ml Disposable Pipettes (TD+)	General Lab Supplier	
Phenylmethylsulphonyl Fluoride Solution (PMSF), 100 mM (Non-SP-G2 workflows only)	Sigma-Aldrich	93482
KIMTECH SCIENCE Precision Wipes	Kimtech Science	7552
Proteinase K Enzyme, Puregene (Non DLS-G2 workflows only)	Qiagen	158918



### ADDITIONAL USER-SUPPLIED MATERIALS FOR DNA ISOLATION

The following protocols list materials required for extracting DNA from varying sources. FAS will highlight the required materials depending on sample type and protocol choice. Ensure that you have the appropriate materials available on training day. In the User Training Kit (see details in “Preparing for Installation and Training”), Bionano provides 1 DNA Isolation Kit, per customers’ request.

Sample Type	Protocol
Human Cell Culture	<a href="#">Generation 2</a> Bionano Prep SP-G2 Fresh Cell DNA Isolation Protocol (P/N CG-00003) Bionano Prep SP-G2 Frozen Cell DNA Isolation Protocol (P/N CG-00004)
Human Blood	<a href="#">Generation 2</a> Bionano Prep SP-G2 Fresh Human Blood DNA Isolation Protocol (P/N CG-00005) Bionano Prep SP-G2 Frozen Human Blood DNA Isolation Protocol (P/N CG-00006) <a href="#">Bionano Prep SP Frozen Human Blood DNA Isolation Protocol v2</a> (P/N 30246)*
Bone Marrow Aspirates	<a href="#">Generation 2</a> Bionano Prep SP-G2 BMA DNA Isolation Protocol (P/N CG-00007)

### ADDITIONAL USER-SUPPLIED MATERIALS FOR DNA LABELING

The following protocols list materials required for labeling genomic DNA. FAS will highlight the required materials depending on labeling type. Ensure that you have the appropriate materials available on training day. In the User Training Kit (see details in “Preparing for Installation and Training”), Bionano provides 1 DNA Labeling Kit, per customers’ request.

Labeling Method	Protocol
Direct Label and Stain (DLS)	<a href="#">Generation 2</a> Bionano Prep Direct Label and Stain G2 (DLS-G2) (P/N CG 30553-1)

## Preparing for Arrival

### Installation guidelines

An authorized service provider delivers the system. Make sure that the crate is stored securely near the installation lab bench. The instrument has two tip-tilt indicators mounted to the outside of the crate as well as one impact-shock indicator. Please inspect the exterior of the crate for damage and inform your FSE if either one of the two tip-tilt sensors, or the shock-impact sensors have been triggered (**Figure 2**).



**Figure 2.** (from left to right) shock-impact sensors (un-triggered and triggered) and tip-tilt sensors (un-triggered and triggered)



**CAUTION:** Only a Bionano Field Service Engineer (or personnel approved by Bionano) can uncrate and install the instrument.

- At least three weeks before installation, confirm with your Field Application Scientist (FAS) that you have the required consumables and equipment.
- Ensure that the lab space and bench are ready for installation.
- Ensure that you have a pallet jack to support the crate and instrument.
- Ensure there are at least three people to assist the FSE with lifting the Stratys instrument.

### Dimensions

Measurement	Instrument Crate (including instrument)	Accessory Crate (including accessories)
Height	110 cm (43 in)	81 cm (32 in)
Width	81 cm (31 in)	109 cm (43 in)
Depth	96 cm (37 in)	74 cm (29 in)
Weight	128kg (282lb)	152kg (335lb)

## Laboratory guidelines

- Prepare a clean, level surface such as a sturdy lab bench for the instrument.
- Keep the instrument away from direct sunlight or heat source.
- Do not place the instrument on a lab bench that has liquids or chemicals.
- Do not place any other equipment on the bench that could produce vibrations, including centrifuges, compressors, and shakers.
- Do not place the instrument on or near objects that can produce vibrations, such as heavy doors.
- Do not place objects on top of the instrument.

## LAB BENCH LAYOUT

Position the instrument to allow proper ventilation and access to the power switch and power outlet.

Access	Minimum Clearance
Lab Bench Space	Allow at least 150 cm (59 in) wide by 77 cm (30 in) depth.
Top	Allow at least 93 cm (37 in) above the instrument.
Back	Allow at least 5 cm (2 in) behind the instrument.
Sides	Allow at least 15 cm (6 in) on each side of the instrument.
Connections	5x standard electrical outlets (100~240 VAC) and 2x 1 GB Ethernet ports



**CAUTION:** Moving the instrument can compromise data integrity.

- Insufficient overhead clearance can damage the stage access door and affect run performance.
- The Stratys Instrument Controller must be placed within 1 m (3 ft) of the instrument.
- The Bionano Access Server must be placed within 1m (3 ft) of the Stratys Instrument Controller.
- The Stratys Compute must be placed within 1m (3 ft) of the Bionano Access Server.

## Environmental considerations

This instrument is designed for indoor use only.

Element	Specification
Temperature	Maintain a stable lab temperature of 19°C (66°F) to 25°C (77°F).
Humidity	Maintain a noncondensing relative humidity between 20–80%.
Elevation	Place the instrument at an altitude below 2,000 m (6,500 ft) above sea level.
Ventilation	At least 5 cm (2 in) of clearance behind the instrument to allow proper ventilation and access to power outlet. 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 as defined by the International Electrotechnical Commission (IEC).

## Preparing for Installation and Training

### Site preparation checklist

- Ensure that your facility is ready for the delivery of the crate.
- Ensure that you have the appropriate equipment to support the crate and instrument (e.g., pallet jack).
- Ensure that all required personnel are present on the scheduled installation day (at least three people to assist the FSE with lifting Stratys instrument).
- Ensure that you have received and properly stored the contents in the Qualification Kit and Accessory Kit.
- Verify that your site has proper computing, network, file storage, and electrical requirements.

### Crate contents

Item	Crate	Storage Temperature
Instrument	Instrument Crate	15–25 °C (59–77 °F)
Monitor	Accessory Crate	15–25 °C (59–77 °F)
Keyboard	Accessory Crate	15–25 °C (59–77 °F)
Mouse	Accessory Crate	15–25 °C (59–77 °F)
Instrument Controller	Individual Box	15–25 °C (59–77 °F)
Bionano Access Server	Accessory Crate	15–25 °C (59–77 °F)
Accessory Kit	Accessory Crate	15–25 °C (59–77 °F)

The FSE will unpack the crates during the installation visit.  
 Compute Servers will ship in additional crate (Storage Temperature: 15–25 °C (59–77 °F)).

### Accessory kit (Part #80095)

Item	Content	Storage Temperature
US-Specific Power Cord	4 each	15–25 °C (59–77 °F)
Display Port Cable	2 each	15–25 °C (59–77 °F)
Network Cable (Cat7)	4 each	15–25 °C (59–77 °F)
USB 2.0 A to B Connector	1 each	15–25 °C (59–77 °F)
Air Filter	3 each	15–25 °C (59–77 °F)
Lens Cleaning Paper	2 each	15–25 °C (59–77 °F)
Mousepad	1 each	15–25 °C (59–77 °F)

**NOTE:** The Accessory Kit is included in the crate.

### Stratys Instrument qualification kit (Part # 90178)

The Stratys System Qualification Kit will be shipped around the same time as the Stratys system unless its shipment is otherwise specified and coordinated by your FSE.

Item	Part #	Content	Storage
Stratys chip	20474	3 each	4 °C
DLS Biological Control A, 100 µl	20400	2 each	4 °C
SP Large Genome Labeling Control. 5000 ng*	20399	1 each	4 °C

\*This control will be used for training.

### User training kits (Part # 90102, 90149, 90111, 90150, 90127, or 90017)

The Stratys System User Training Kit will be coordinated by your FAS to arrive approximately one to three weeks before training begins. It will contain a combination of 1) a DNA Labeling Kit, 2) a DNA Isolation Kit (Saphyr Chips & Control will be provided with the Qualification Kit, and 3) 25 tokens (to demo Compute On Demand usage). Coordinate with your FAS to send the proper Labeling Kit and Isolation Kit combination as listed by referencing one of the part numbers below for delivery:

**Part # 90102:** DLS Labeling + SP Blood and Cell DNA Isolation v2 + Bionano Prep SP Magnetic Retriever

**Part # 90149:** DLS-G2 Labeling + SP-G2 Blood and Cell DNA Isolation + Bionano Prep SP Magnetic Retriever

**Part # 90111:** DLS Labeling + SP Bone Marrow Aspirate DNA Isolation v2 + Bionano Prep SP Magnetic Retriever

**Part # 90150:** DLS-G2 Labeling + SP-G2 Bone Marrow Aspirate DNA Isolation + Bionano Prep SP Magnetic Retriever

**Part # 90127:** DLS Labeling + SP Tumor and Tissue DNA Isolation + Bionano Prep SP Magnetic Retriever

**Part # 90017:** DLS Labeling + Plant Tissue DNA Isolation

### Labeling kits training

The table indicates the contents to be expected in the available labeling kits:

Labeling Training Kit	Part #	Content	# of Boxes	Storage
Bionano Prep DLS Labeling Kit	80005	1 each (10 rxn)	3	-20°C, 4°C, 15-30°C
Bionano Prep DLS-G2 Labeling Kit	80046	1 each (12 rxn)	3	-20°C, 4°C, 15-30°C

### 1) DNA Isolation Training Kit: SP Blood & Cell, SP BMA, SP Tissue and Tumor or Plant Tissue

Choose one of the DNA isolation kits below to be used during training.

DNA Isolation Training Kits	Part #	Content	# of Boxes	Storage
SP Blood & Cell Culture DNA Isolation Kit v2	80042	1 each (10 rxn)	2	4°C, 15-30°C
SP Bone Marrow Aspirate (BMA) DNA Isolation Kit v2	90103	1 each (10 rxn)	3	4°C, 15-30°C
SP-G2 Bone Marrow Aspirate (BMA) DNA Isolation Kit v2	90151	1 each (12 rxn)	3	4°C, 15-30°C

### 2) 25 tokens for Bionano Compute On Demand Customers

## Post-Installation Follow Up and Resources

After you have completed the training, you will have a follow-up review meeting with your FAS. The review meeting is usually in the format of a conference call.

For the review, prepare to provide the following:

- Data produced from your first run without the FAS on site.
- List of customization requests for the instrument and software.
- List of questions, concerns, and issues, such as your level of comfort, comprehension, and confidence on using the Stratys system.

## Additional resources

The following documentation is available for download from the [Bionano Support](#) page.

Resource	Description
<i>Stratys System Safety Guide</i> (CG-00023)	Provides information about the instrument safety considerations.
<i>Stratys System User Guide</i> (CG-00041)	Provides an overview of instrument components and software, proper maintenance, and troubleshooting.
<i>Bionano Access Software Guide</i> (CG-30142)	Provides an overview of data analysis.
<i>Bionano Genomics Data Security Guidelines</i> (CG-30292)	Provides security guidelines for Compute On Demand usage.
<i>Bionano VIA Installation Guide</i> (CG-00044)	Guide Detailing the Installation of VIA

## Glossary

Term	Definition
CIFS	Common Internet File System
FAS	Field Application Scientist
FSE	Field Service Engineer
GB	Gigabyte
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
OS	Operating system
SGE jobs	Son of Grid Engine jobs
SSD	Solid-state drive
SFTP	Secure File Transfer Protocol
SMTP	Simple Mail Transfer Protocol
SSH	Secure Shell
TB	Terabyte
IEC	International Electrotechnical Commission

## 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
<b>Email</b>	<a href="mailto:support@bionano.com">support@bionano.com</a>
<b>Phone</b>	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
<b>Website</b>	<a href="http://www.bionano.com/support">www.bionano.com/support</a>
<b>Address</b>	Bionano, Inc. 9540 Towne Centre Drive, Suite 100 San Diego, CA 92121



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