



# NextSeq 1000 and 2000

## Site Prep Guide

ILLUMINA PROPRIETARY

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# Revision History

Document #	Date	Description of Change
1000000109378 v05	August 2021	Updated sequencing consumables. Corrected storage temperature for RSB with Tween 20 in Required Storage for Sequencing Consumables.
1000000109378 v04	April 2021	Updated sequencing consumables. Added NFS as a supported network mounting drive method. Added instructions for updating CentOS.
1000000109378 v03	November 2020	Corrected catalog numbers. Updated images.
1000000109378 v02	October 2020	Updated space requirements Updated instrument placement guidelines. Updated consumables.
1000000109378 v01	June 2020	Added storage requirements for secondary analysis data. Added placement requirement to keep air outlet clear of obstructions. Added Ethernet ports to Control Computer Connections section. Fixed crate contents to exclude network cable. Fixed number of spare filters included with system. Added environmental considerations for the compute server. Added recommendation that network cables are available before starting installation.
1000000109378 v00	March 2020	Initial release.

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# Introduction

This guide provides specifications and guidelines for preparing your site for installation and operation of the NextSeq 1000/2000™ Sequencing System:

- Laboratory space requirements
- Electrical requirements
- Environmental constraints
- Computing requirements
- User-supplied consumables and equipment

## Safety Considerations

See the *NextSeq 1000 and NextSeq 2000 Sequencing Systems Safety and Compliance Guide* (document # 1000000111928) for important information about safety considerations.

## Additional Resources

The [NextSeq 1000 and NextSeq 2000 Sequencing System support pages](#) on the Illumina website provide additional system resources. These resources include software, training, compatible products, and the following documentation. Always check support pages for the latest versions.

Resource	Description
<a href="#">Custom Protocol Selector</a>	A tool for generating end-to-end instructions tailored to your library prep method, run parameters, and analysis method, with options to refine the level of detail.
<i>NextSeq 1000 and NextSeq 2000 Sequencing Systems Safety and Compliance Guide</i> (document # 1000000111928)	Provides information about operational safety considerations, compliance statements, and instrument labeling.
<i>RFID Reader Module Compliance Guide</i> (document # 1000000002699)	Provides information about the RFID reader in the instrument, compliance certifications, and safety considerations.
<i>NextSeq 1000 and 2000 Denature and Dilute Guide</i> (document # 1000000139235)	Provides instructions for manually denaturing and diluting prepared libraries for a sequencing run, and preparing optional PhiX control.

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Resource	Description
<i>NextSeq 1000 and 2000 Sequencing System Custom Primers Guide (document # 10000000133551)</i>	Provides information about replacing Illumina sequencing primers with custom sequencing primers.
<i>NextSeq 1000 and 2000 Sequencing System Guide (document # 1000000109376)</i>	Provides an overview of instrument components, instructions for operating the instrument, and maintenance and troubleshooting procedures.
<i>BaseSpace help (help.basespace.illumina.com)</i>	Provides information about using BaseSpace™ Sequence Hub and available analysis options.
<i>Index Adapters Pooling Guide (document # 1000000041074)</i>	Provides pooling guidelines and dual indexing strategies.
<i>Illumina Adapter Sequences (document # 1000000002694)</i>	Provides lists of the adapter sequences for Illumina library prep kits.

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# Delivery and Installation

An authorized service provider delivers the system, uncrates components, and places the instrument on the lab bench. Make sure that the lab space and bench are ready before delivery.

## ! | Caution

Only authorized personnel can uncrate, install, or move the instrument. Mishandling of the instrument can affect the alignment or damage instrument components.

An Illumina representative installs and prepares the instrument. When connecting the instrument to a data management system or remote network location, make sure that the path for data storage is selected before the date of installation. The Illumina representative can test the data transfer process during installation.

Access to instrument USB ports is required for installation, maintenance, and service.

## ! | Caution

After your Illumina representative has installed and prepared the instrument, *do not* relocate the instrument. Moving the instrument improperly can affect the optical alignment and compromise data integrity. If you have to relocate the instrument, contact your Illumina representative.

## Crated Dimensions and Contents

The NextSeq 1000 and NextSeq 2000 Sequencing System is shipped in one crate. Use the following dimensions to determine the minimum door width required to accommodate the shipping container.

Measurement	Crated Dimensions
Height	118 cm (46.5 in)
Width	92 cm (36.2 in)
Depth	120 cm (47.2 in)
Weight	232 kg (511.5 lb)

The crate contains the instrument along with the following components:

- Power cord (8 ft)
- Accessories kit, which contains the following components:
  - Keyboard and mouse



# Laboratory Requirements

This section provides specifications and requirements for setting up your lab space. For more information, see [Environmental Considerations on page 1](#).

## Instrument Dimensions

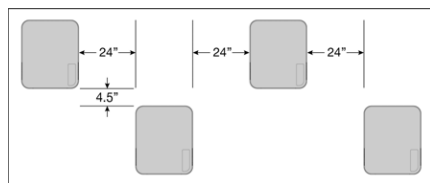


Measurement	Instrument Dimensions (Installed)
Height	60 cm (23.6 in)
Width	60 cm (23.6 in)
Depth	65 cm (25.6 in)
Weight	141 kg (310.9 lb)

## Placement Requirements

Position the instrument to allow proper ventilation, access to power outlet, and access for servicing the instrument.

- Position the instrument so that personnel can quickly disconnect the power cord from the outlet.
- Multiple instruments placed back-to-back must be offset at least 61 cm (24 in) on each side.



- Make sure that hot exhaust air does not blow into the instrument's air intake.
- Make sure that the instrument is accessible from all sides and clear from obstruction, so air can circulate and the instrument can be easily accessed and serviced.
- Make sure there is enough space in front of the instrument for the keyboard.
- Make sure that any shelves above the instrument are  $\leq 30.5$  cm (12 in) deep.

Access	Minimum Clearance
Sides	Allow at least 50.8 cm (20 in) on each side of the instrument.
Rear	Allow at least 11.4 cm (4.5 in) behind the instrument.
Top	Allow at least 61 cm (24 in) above the instrument.

### ! | Caution

Moving the instrument improperly can affect the optical alignment and compromise data integrity. If you have to relocate the instrument, contact your Illumina representative.

## Lab Bench Guidelines

The instrument includes precision optical elements. Place the instrument on a sturdy lab bench away from sources of vibration. The instrument should be isolated on a moveable bench. The measurements do not include the 5–10 cm required for cable management.

Width	Height	Depth	Casters
122 cm (48 in)	91.4 cm (36 in)	76.2 cm (30 in)	Optional

For North American customers, Illumina recommends the following lab bench: Bench-Tek Solutions ([www.bench-tek.com](http://www.bench-tek.com)), part # BT40CR-3048BS-PS.

## Vibration Guidelines

Keep the vibration level of the lab floor at, or below, the VC-A standard of 50  $\mu\text{m/s}$  for  $\frac{1}{3}$  octave band frequencies of 8–80 Hz. This level is typical for labs. Do not exceed the ISO Operating Room (baseline) standard of 100  $\mu\text{m/s}$  for  $\frac{1}{3}$  octave band frequencies of 8–80 Hz.

During sequencing runs, use the following best practices to minimize vibrations and ensure optimal performance:

- Place the instrument on a sturdy lab bench.
- Do not place keyboards, used consumables, or other objects on top of the instrument.
- Do not install the instrument near sources of vibration that exceed the ISO Operating Room standard. For example:
  - Motors, pumps, shake testers, drop testers, and heavy air flows in the lab.
  - Floors directly above or below HVAC fans, and controllers, and helipads.
  - Construction or repair work on the same floor as the instrument.
  - Areas with high foot traffic.
- Use only the touch screen, keyboard, and mouse to interact with the instrument. Do not directly impact the instrument surfaces during operation.

## Lab Setup for PCR Procedures

Some library prep methods require the polymerase chain reaction (PCR) process.

Establish dedicated areas and lab procedures to prevent PCR product contamination before you begin work in the lab. PCR products can contaminate reagents, instruments, and samples, delaying normal operations and causing inaccurate results.

### Pre-PCR and Post-PCR Areas

Use the following guidelines to avoid cross-contamination.

- Establish a pre-PCR area for pre-PCR processes.
- Establish a post-PCR area for processing PCR products.
- Do not use the same sink to wash pre-PCR and post-PCR materials.
- Do not use the same water purification system for pre-PCR and post-PCR areas.
- Store supplies used for pre-PCR protocols in the pre-PCR area. Transfer them to the post-PCR area as needed.

### Dedicate Equipment and Supplies

- Do not share equipment and supplies between pre-PCR and post-PCR processes. Dedicate a separate set of equipment and supplies in each area.
- Establish dedicated storage areas for consumables used in each area.

## Required Storage for Sequencing Consumables

Table 1 Kit Components

Consumable	Quantity	Storage Temperature	Dimensions
Cartridge	1	-25°C to -15°C	29.2 cm × 17.8 cm × 12.7 cm (11.5 in × 7 in × 5 in)
Flow cell*	1	2°C to 8°C	21.6 cm × 12.7 cm × 1.9 cm (8.5 in × 5 in × 0.75 in)
RSB with Tween 20*	1	2°C to 8°C	4 cm × 6.6 cm × 5 cm (1.6 in × 2.6 in × 2 in)

\*Shipped at room temperature

# Electrical Requirements

## Power Specifications

Table 2 Instrument Power Specifications

Type	Specification
Line Voltage	100–240 Volts AC @ 50/60 Hz
Power Supply Rating	750 Watts, maximum

Table 3 Server Power Specifications

Type	Specification
Line Voltage	24 Volts DC, 23A
Power Supply Rating	552 Watts, maximum

## Receptacles

Your facility must be wired with the following equipment:

- For 100-120 Volts AC—A 15 amp grounded, dedicated line with proper voltage and electrical ground is required. North America and Japan—Receptacle: NEMA 5-15
- For 220-240 Volts AC—A 10 amp grounded line with proper voltage and electrical ground is required. If the voltage fluctuates more than 10%, a power line regulator is required.

## Protective Earth




The instrument has a connection to protective earth through the enclosure. The safety ground on the power cord returns protective earth to a safe reference. The protective earth connection on the power cord must be in good working condition when using this device.

## Power Cords

The instrument is equipped with an international standard IEC 60320 C14 receptacle and is shipped with a region-specific power cord.

Hazardous voltages are removed from the instrument only when the power cord is disconnected from the AC power source.

To obtain equivalent receptacles or power cords that comply with local standards, consult a third-party supplier such as Interpower Corporation ([www.interpower.com](http://www.interpower.com)).

 | **Caution**

Never use an extension cord to connect the instrument to a power supply.

## Fuses

The instrument contains no user-replaceable fuses.

# Uninterruptible Power Supply

A user-supplied uninterruptible power supply (UPS) is highly recommended. Illumina is not responsible for runs affected by interrupted power regardless of whether the instrument is connected to a UPS. Standard generator-backed power is often *not* uninterruptible and a brief power outage is typical before power resumes.

The following table lists region-specific recommendations.

Specification	APC Smart UPS 1500 VA LCD 100 V Part # SMT1500J (Japan)	APC Smart UPS 1500 VA LCD 120 V Part # SMT1500C (North America)	APC Smart UPS 1500 VA LCD 230 V Part # SMT1500IC (International)
Maximum Output Capacity	980 W / 1200 VA	1000 W / 1440 VA	1000 W / 1500 VA
Input Voltage (nominal)	100 VAC	120 VAC	230 VAC
Input Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Input Connection	NEMA 5-15P	NEMA 5-15P	IEC-320 C14 Schuko CEE7/EU1-16P British BS1363A
Dimensions (H × W × D)	22.5 cm × 17.2 cm × 43.9 cm	21.9 cm × 17.1 cm × 43.9 cm (8.6 in × 6.7 in × 17.3 in)	21.9 cm × 17.1 cm × 43.9 cm
Weight	26 kg	24.6 kg (54.2 lbs)	24.1 kg
Typical Run Time (500 W)	23 minutes	23 minutes	23 minutes

To obtain an equivalent UPS that complies with local standards for facilities outside the referenced regions, consult a third-party supplier such as Interpower Corporation ([www.interpower.com](http://www.interpower.com)).

# Environmental Considerations

Element	Specification
Temperature	Maintain a lab temperature of 15°C to 30°C. This temperature is the operating temperature of the instrument. During a run, do not allow the ambient temperature to vary more than $\pm 2^\circ\text{C}$ . Maximum temperature for the Compute Server is 40°C.
Humidity	Maintain a noncondensing relative humidity between 20–80%.
Elevation	Locate the instrument at an altitude below 2000 meters (6500 feet).
Air Quality	Operate the instrument in an indoor environment with air particulate cleanliness levels per ISO 14644-1 Class 9 (ordinary room / laboratory air), or better. Keep instrument away from sources of dust. For indoor use only.
Ventilation	Consult your facilities department for ventilation requirements based on the instrument heat output specifications.
Vibration	Limit the continuous vibration of the lab floor to ISO office level. During a sequencing run, do not exceed ISO operating room limits. Avoid intermittent shocks or disturbances near the instrument.

## Heat Output

Measured Power	Thermal Output
750 Watts	Maximum 2560 BTU/hour Average 1700 BTU/hour

## Noise Output

Noise Output (dB)	Distance from Instrument
$\leq 70$ dB	1 meter (3.3 feet)

A measurement of  $\leq 70$  dB is within the level of a normal conversation at a distance of approximately 1 meter (3.3 feet).



# Network Considerations

The NextSeq 1000 and NextSeq 2000 Sequencing System is designed for use with a network, regardless of whether runs are connected to BaseSpace Sequence Hub or performed in manual run mode. The NextSeq 1000/2000 control computer runs CentOS with SELinux enabled. The NextSeq 1000/2000 does not support encryption being enabled.

Performing a run in manual mode requires a network connection to transfer run data to a network storage location. Do not save run data to the local hard drive on the NextSeq 1000 and NextSeq 2000 Sequencing System. The hard drive is intended for temporary storage before data are transferred automatically.

An internet connection is required for the following operations:

- Connect to Illumina BaseSpace Sequence Hub.
- Upload instrument performance data for Illumina Proactive Support (see *Illumina Proactive Technical Note (document # 1000000052503)*).
- [Optional] Remote assistance from Illumina Technical Support.

## Network Connections

Use the following recommendations to install and configure a network connection:

- Use a dedicated 1 gigabit connection between the instrument and your local data management system. This connection can be made directly or through a managed network switch.
- Required bandwidth for a connection is:
  - 200 Mb/s/instrument intranet bandwidth for local storage.
  - 5 Mb/s/instrument minimum internet bandwidth to support download of NextSeq 1000/2000 Control Software and DRAGEN Workflows (~15 GB). Download times out after 6 hours. 35 Mb/s/instrument internet bandwidth is required to support download within 1 hour.
  - 10 Mb/s/instrument internet bandwidth for BaseSpace Sequence Hub cloud storage (including Illumina Proactive Support).
  - 5 Mb/s/system internet bandwidth for run monitoring or Illumina Proactive Support only.
- Switches must be managed.
- Intranet and to the edge of local network equipment such as switches must have a minimum of 1 gigabit per second rating.
- Calculate the total capacity of the workload on each network switch. The number of connected instruments and ancillary equipment such as a printer can impact capacity.
- If possible, isolate sequencing traffic from other network traffic.

- Cables must be CAT 5e or better, but CAT 6 or better is recommended.
  - Make sure required cables are available before starting installation.

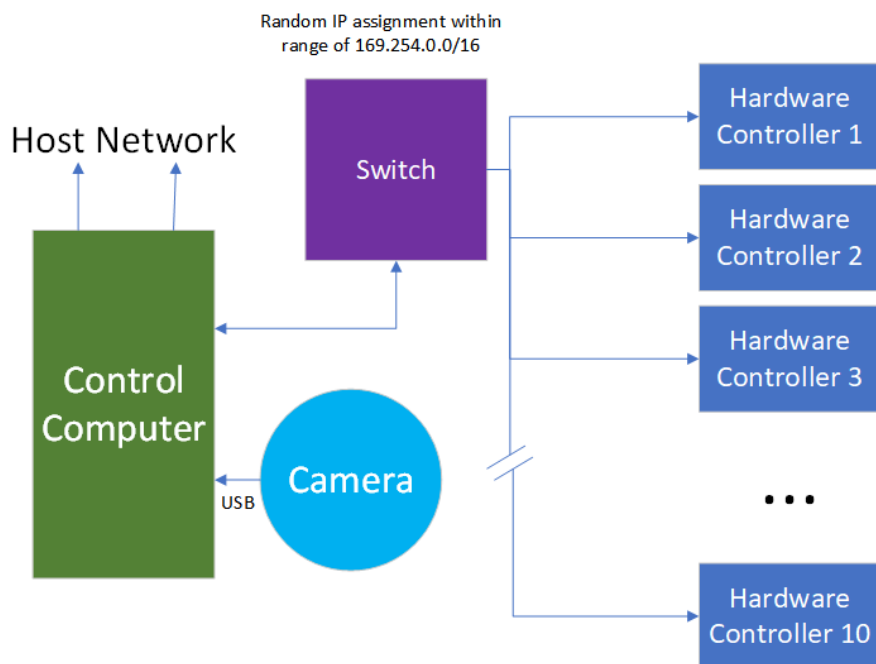
## Network Support

Illumina does not install or provide technical support for network connections.

Review network architecture for potential compatibility risks with the Illumina system, keeping in mind the following factors:

- Potential IP address conflicts—The NextSeq 1000 and NextSeq 2000 Sequencing System assigns random internal IP addresses within range of 169.254.0.0/16, which can cause system failure in the case of conflicts.
- IP assignment—The NextSeq 1000 and NextSeq 2000 Sequencing System supports DHCP or Static IP assignment.

## Control Computer Connections



The following tables describe the network ports and domains of the control computer. Use these tables as a reference when setting up your network.

## Internal Connections

Connection	Value	Purpose
OS Designation	enp5s0	Communication between internal components (Do not configure or change after installation)
Domain	localhost:*	All ports for localhost-to-localhost communication, which are needed for interprocess communication.
Port	8081	Real-Time Analysis
	8080	NextSeq 1000/2000 Control Software
	29644	Universal Copy Service (UCS)

## Outbound Connections

Connection	Value	Purpose
OS Designation	enp2s0	Preferred Ethernet port for internet (left port when viewed from back of the instrument)
	enp6s0	Preferred Ethernet port for NAS or network storage (right port when viewed from back of the instrument)
Port	443	BaseSpace Sequence Hub or Illumina Proactive configuration
	80	BaseSpace Sequence Hub or Illumina Proactive configuration data upload
	8080	Software updates

## BaseSpace Sequence Hub and Illumina Proactive Domains

The following domains provide access from Universal Copy Service to BaseSpace Sequence Hub and Illumina Proactive. Some Enterprise addresses include a user-defined domain field. This custom field is reserved with {domain}.

Instance	Address
US Enterprise	{domain}.basespace.illumina.com
	{domain} api.basespace.illumina.com
	basespace-data-east.s3-external-1.amazonaws.com
	basespace-data-east.s3.amazonaws.com
	instruments.sh.basespace.illumina.com

Instance	Address
EU Enterprise	{domain}.euc1.sh.basespace.illumina.com
	{domain} api.euc1.sh.basespace.illumina.com
	euc1-prd-seq-hub-data-bucket.s3.eu-central-1.amazonaws.com
	instruments.sh.basespace.illumina.com
AUS Enterprise	{domain}.aps2.sh.basespace.illumina.com
	api.aps2.sh.basespace.illumina.com
	instruments.sh.basespace.illumina.com
	aps2-sh-prd-seq-hub-data-bucket.s3.ap-southeast-2.amazonaws.com
	aps2.platform.illumina.com
US Basic and Professional	basespace.illumina.com
	api.basespace.illumina.com
	basespace-data-east.s3-external-1.amazonaws.com
	basespace-data-east.s3.amazonaws.com
	instruments.sh.basespace.illumina.com
EU Basic and Professional	euc1.sh.basespace.illumina.com
	api.euc1.sh.basespace.illumina.com
	euc1-prd-seq-hub-data-bucket.s3.eu-central-1.amazonaws.com
	instruments.sh.basespace.illumina.com

## Operating System Configurations

Illumina instruments are tested and verified to operate within specifications before shipping. After installation, changes to settings can create performance or security risks.

The following configuration recommendations mitigate performance and security risks for the operating system:

- Configure a password that is at least 10 characters, and use local ID policies for additional guidance. *Keep a record of the password.*
  - Illumina does not keep customer login credentials. Unknown passwords can be reset with access to the system's root account or by booting into single-user mode.
  - Otherwise, an Illumina representative can restore the factory default, which removes all data from the system and may extend the time required for repair or maintenance.

- Maintain existing privileges for preconfigured users. Make preconfigured users unavailable as needed.
- The system assigns random internal IP addresses, which it uses to communicate with the hardware components. If these IP addresses are amended, or if the method of assigning the IP addresses is changed, then hardware errors can occur (including total loss of functionality).
- The control computer is designed to operate Illumina sequencing systems. Web browsing, checking email, reviewing documents, and other nonsequencing activity creates quality and security problems.

## Services

NextSeq 1000/2000 Control Software utilizes Universal Copy Service. By default, this service uses the same credentials as those used to log on to the NextSeq 1000 and NextSeq 2000 Sequencing System.

## Mounting Network Drives

Do not share any drives or folders from the instrument.

Server Message Block (SMB), Common Internet File System (CIFS), and Network File System (NFS) are the only supported methods for persistent mounting of a network drive on the instrument.

## CentOS Updates

Use the following instructions to install NextSeq 1000/2000 OS updates.

### Install Updates Using Terminal

1. If NextSeq 1000/2000 Control Software is open, select **Minimize Application**.
2. Log in to ilmadmin.
3. Select **Applications**.
4. Under **Favorites**, select **Terminal**.
5. To show information about available updates and packages, enter `sudo yum check-update`, and then select **Enter**.
6. Enter the ilmadmin password when prompted.
7. Refresh the OS updates package database and install updates by entering `sudo yum update`, and then selecting **Enter**.

### Install Updates Using the User Interface

1. If NextSeq 1000/2000 Control Software is open, select **Minimize Application**.
2. Log in to ilmadmin.

3. Select Applications.
4. Under System Tools, select Software Updates.  
A list displays any available updates that can correct errors, eliminate security vulnerability, and provide new features.
5. Select Install Updates.

## Third-party Software

Illumina supports only the software provided at installation.

Chrome, Java, Box, antivirus software, and other third-party software are untested and can interfere with performance and security. For example, RSync interrupts streaming performed by the control software suite. The interruption can cause corrupt and missing sequencing data.

## User Behavior

The instrument control computer is designed to operate Illumina sequencing systems. Do not consider it a general-purpose computer. Do not install any additional software unless requested by an Illumina representative. For quality and security reasons, do not use the control computer for web browsing, checking email, reviewing documents, or other unnecessary activity. These activities can result in degraded performance or loss of data.

# Data Output and Storage

## Storage Requirements for BaseSpace Sequence Hub

Illumina recommends uploading data to BaseSpace Sequence Hub. Based on run size, BaseSpace Sequence Hub requires the following approximate storage per run

Read Length	BCL	BAM	CRAM	FASTQ
2 × 50 bp	20 GB	50 GB	15 GB	75 GB
2 × 100 bp	40 GB	75 GB	30 GB	150 GB
2 × 150 bp	55 GB	150 GB	60 GB	300 GB

# User-Supplied Consumables and Equipment

The following consumables and equipment are used on the NextSeq 1000/2000. For more information, see the *NextSeq 1000 and 2000 Sequencing System Guide* (document # 1000000109376).

## Consumables for Sequencing

Consumable	Supplier	Purpose
Disposable gloves, powder-free	General lab supplier	General purpose.
NextSeq 1000/2000 P1 Reagents kit	Illumina: catalog # 20050264 (300 cycles)	Provides kitted reagents for sequencing plus dual-indexing support (up to 100 million single reads). Includes the NextSeq 1000/2000 Reagent Cartridge, NextSeq 1000/2000 P1 Flow Cell, and RSB with Tween 20. This reagent kit is based on v3 reagents. Compatible with NextSeq 1000 and NextSeq 2000.
NextSeq 1000/2000 P2 Reagents (v3) kit	Illumina: catalog # 20046811 (100 cycles) catalog # 20046812 (200 cycles) catalog # 20046813 (300 cycles)	Provides kitted reagents for sequencing plus dual-indexing support (up to 400 million single reads). Includes the NextSeq 1000/2000 Reagent Cartridge, NextSeq 1000/2000 P2 Flow Cell, and RSB with Tween 20. Compatible with NextSeq 1000 and NextSeq 2000.
NextSeq 2000 P3 Reagents kit	Illumina catalog # 20046810 (50 cycles) catalog # 20040559 (100 cycles) catalog # 20040560 (200 cycles) catalog # 20040561 (300 cycles)	Provides kitted reagents for sequencing plus dual-indexing support (up to 1.2 billion single reads). Includes the NextSeq 2000 Reagent Cartridge, NextSeq 2000 P3 Flow Cell, and RSB with Tween 20. This reagent kit is based on v3 reagents. Only compatible with NextSeq 2000.



Consumable	Supplier	Purpose
Microtubes, 1.5 ml	Fisher Scientific, catalog # 14-222-158, or equivalent low-bind tubes	Diluting libraries to the loading concentration.
Pipette tips, 10 µl	General lab supplier	Diluting libraries.
Pipette tips, 20 µl	General lab supplier	Diluting and loading libraries.
Pipette tips, 200 µl	General lab supplier	Diluting libraries.
Pipette tips, 1000 µl	General lab supplier	Piercing the library reservoir foil.
NextSeq 1000/2000 RSB with Tween 20	Illumina provided in the NextSeq 1000/2000 Reagents kits	Diluting libraries to the loading concentration.
[Optional] PhiX Control v3	Illumina, catalog # FC-110-3001	Performing a PhiX-only run or spiking in a PhiX control.
[Optional] Paper towels	General lab supplier	Drying the cartridge after a water bath.
[Optional] NextSeq 1000/2000 custom primers	Illumina catalog # 20046116 (Index primers) catalog # 20046117 (Read primers) catalog # 20046115 (Read and index primers)	Provides custom read primers, custom index primers, HT1, HP21, and BP14.

## Consumables for Maintenance

Consumable	Supplier	Purpose
Disposable gloves, powder-free	General lab supplier	General purpose.
NextSeq 1000/2000 P1 Reagents Air Filter Replacement*	Illumina, catalog # 20029759	Replacing the air filter every six months.

\* The instrument ships with one installed and one spare. When not under warranty, replacements are user-supplied. Keep packaged until use.

## Equipment

Item	Source	Purpose
Freezer, -25°C to -15°C	General lab supplier	Storing the cartridge.
Ice bucket	General lab supplier	Setting aside libraries until sequencing.
Pipette, 10 µl	General lab supplier	Diluting libraries to the loading concentration.
Pipette, 20 µl	General lab supplier	Diluting libraries to the loading concentration and loading libraries into the cartridge.
Pipette, 200 µl	General lab supplier	Diluting libraries to the loading concentration.
Refrigerator, 2°C to 8°C	General lab supplier	Storing the flow cell or thawing the cartridge.
<p>[Optional] One of the following temperature controlled water baths or equivalent bath that can hold at 25°C:</p> <ul style="list-style-type: none"> <li>• Thermo Scientific Precision 35L Circulating Water Bath</li> <li>• SHEL LAB 22L Digital Circulating Water Bath</li> </ul>	<ul style="list-style-type: none"> <li>• Thermo Fisher Scientific, catalog # TSCIR35</li> <li>• Shel Lab, catalog # SWBC22</li> </ul>	Thawing the cartridge.

# Technical Assistance

For technical assistance, contact Illumina Technical Support.

Website: [www.illumina.com](http://www.illumina.com)  
Email: [techsupport@illumina.com](mailto:techsupport@illumina.com)

## Illumina Technical Support Telephone Numbers

Region	Toll Free	International
Australia	+61 1800 775 688	
Austria	+43 800 006249	+43 1 9286540
Belgium	+32 800 77 160	+32 3 400 29 73
Canada	+1 800 809 4566	
China		+86 400 066 5835
Denmark	+45 80 82 01 83	+45 89 87 11 56
Finland	+358 800 918 363	+358 9 7479 0110
France	+33 8 05 10 21 93	+33 1 70 77 04 46
Germany	+49 800 101 4940	+49 89 3803 5677
Hong Kong, China	+852 800 960 230	
India	+91 8006500375	
Indonesia		0078036510048
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Italy	+39 800 985513	+39 236003759
Japan	+81 0800 111 5011	
Malaysia	+60 1800 80 6789	
Netherlands	+31 800 022 2493	+31 20 713 2960
New Zealand	+64 800 451 650	
Norway	+47 800 16 836	+47 21 93 96 93
Philippines	+63 180016510798	
Singapore	1 800 5792 745	
South Korea	+82 80 234 5300	

Region	Toll Free	International
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Sweden	+46 2 00883979	+46 8 50619671
Switzerland	+41 800 200 442	+41 56 580 00 00
Taiwan, China	+886 8 06651752	
Thailand	+66 1800 011 304	
United Kingdom	+44 800 012 6019	+44 20 7305 7197
United States	+1 800 809 4566	+1 858 202 4566
Vietnam	+84 1206 5263	

Safety data sheets (SDSs)—Available on the Illumina website at [support.illumina.com/sds.html](https://support.illumina.com/sds.html).

Product documentation—Available for download from [support.illumina.com](https://support.illumina.com).





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