

# cBot System

## Site Prep Guide

Introduction	3
Delivery and Installation	3
Laboratory Requirements	4
Electrical Requirements	6
Environmental Considerations	7
User-Supplied Consumables	7
Revision History	8
Technical Assistance	9



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## Introduction

This guide provides specifications and guidelines for preparing your site for installation and operation of the Illumina® cBot 2 and cBot systems:

- ▶ Laboratory space requirements
- ▶ Electrical requirements
- ▶ Environmental constraints

## Additional Resources

The following documentation is available for download from the Illumina website.

Resource	Description
<i>cBot 2 System Safety and Compliance Guide (document # 15065643) or cBot Safety and Compliance Booklet (part # 15012615)</i>	Provides information about instrument labeling, compliance certifications, and safety considerations.
<i>HiSeq and GAllx Systems Denature and Dilute Libraries Guide (document # 15050107)</i>	Provides instructions for denaturing and diluting prepared libraries before sequencing, and preparing a PhiX control. This step applies to most library types and flow cells.
<i>cBot 2 System Guide (document # 15065681) or cBot System Guide (document # 15006165)</i>	Provides an overview of instrument components and software, instructions for preparing reagents and performing clustering runs, and procedures for proper instrument maintenance and troubleshooting.

Visit the cBot 2 or cBot support page on the Illumina website for access to documentation, software downloads, online training, and frequently asked questions.

## Delivery and Installation

An authorized service provider delivers the system, uncrates components, and places the instrument on the lab bench or other suitable location. Ready the lab space and bench before delivery.



### CAUTION

Only authorized personnel can uncrate, install, or move the instrument. Mishandling of the instrument can affect the optical alignment, compromising data integrity, 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. During installation, the Illumina representative can test the data transfer process.



### CAUTION

If you must relocate the instrument after installation, contact your Illumina representative.

## Crated Dimensions and Contents

The cBot is shipped in 1 box. Use the following dimensions to determine the minimum door width required to accommodate the shipping container.

Measurement	cBot 2 Box Dimensions	cBot Box Dimensions
Height	78 cm (30.75 in)	51 cm (20.25 in)
Width	57 cm (22.3 in)	52 cm (20.5 in)
Depth	62 cm (24.4 in)	75 cm (29.5 in)
Weight	33 kg (73 lbs)	34 kg (75 lbs)

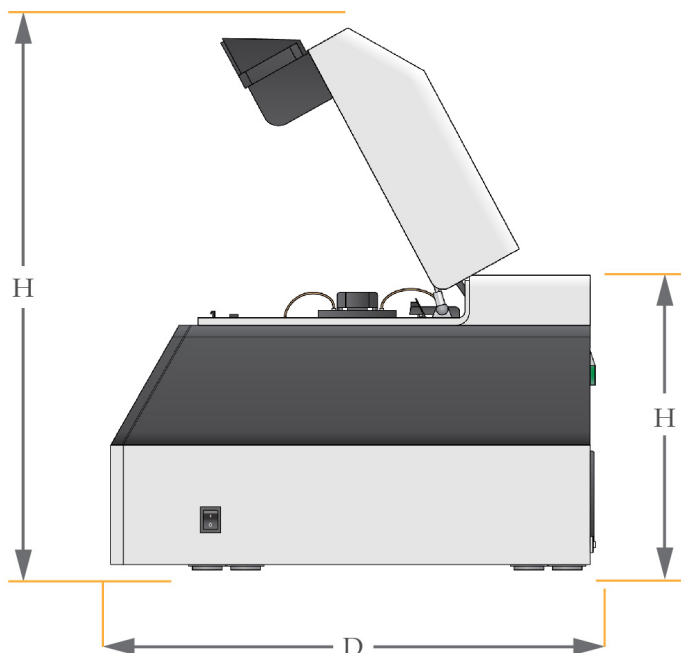
The box contains the instrument and the following components:

- ▶ GAllx flow cell adapter plate
- ▶ Power cord
- ▶ Waste bottle
- ▶ One of the following system guides:
  - ▶ *cBot 2 System Guide (document # 15065681)*
  - ▶ *cBot System Guide (document # 15006165)*
- ▶ One of the following safety and compliance guides:
  - ▶ *cBot 2 System Safety and Compliance Guide (document # 15065643)*
  - ▶ *cBot Safety and Compliance Booklet (part # 15012615)*

## Laboratory Requirements

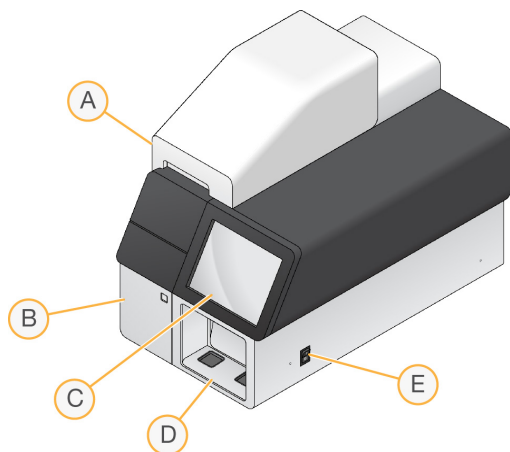
This section provides requirements and guidelines for setting up your lab space. For more information, see [Environmental Considerations on page 1](#).

### Instrument Dimensions



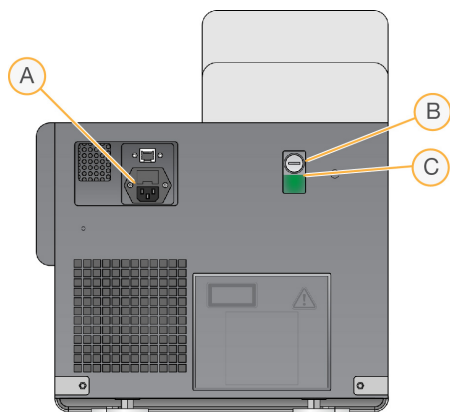
Measurement	cBot 2 Dimensions	cBot Dimensions
Height (lid open)	71 cm (28 in)	70 cm (27.5 in)
Height (lid closed)	45 cm (17.75 in)	39 cm (15.5 in)
Depth	62 cm (24.5 in)	62 cm (24.5 in)
Width	38 cm (15 in)	38 cm (15 in)
Weight	30 kg (66 lbs)	31 kg (68 lbs)

## Exterior Components



- A **Lid**—Covers the thermal stage, reagent stage, and wash reservoir. Contains the flow cell barcode scanner for cBot 2.
- B **Waste bottle compartment**—Holds the sensor-controlled waste bottle.
- C **Monitor**—Displays the cBot user interface.
- D **External barcode scanner**—Scans barcode ID of reagent plate and flow cell for any run without sample tracking.
- E **Power switch**—Turns on the instrument.

## Rear Panel Components



- A Power Connection
- B Coolant Reservoir

C Coolant Level

## Placement Requirements

The instrument position must ensure access to the power switch and power outlet, for proper ventilation, and for servicing the instrument.

- ▶ Position the instrument so that personnel can quickly disconnect the power cord from the outlet.
- ▶ The instrument must be accessible from all sides using the following minimum clearance dimensions.

Access	Minimum Clearance
Sides	Allow at least 61 cm (24 in) on each side of the instrument.
Rear	Allow at least 15.2 cm (6 in) behind the instrument.
Top	Allow at least 61 cm (24 in) above the instrument. If the instrument is positioned under a shelf, make sure that the minimum clearance is met.

## Electrical Requirements

### Power Specifications

Illumina recommends a user-supplied uninterrupted power supply (UPS) to protect the instrument in the event of a power surge or loss.

Type	Specification
Line Voltage	100–240 VAC at 50–60 Hz
Power Consumption	500 Watts
Receptacle	A 6–10 Amp grounded, dedicated line with proper voltage and electrical ground

### 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 comes with an international standard IEC 60320 receptacle and is shipped with a region-specific power cord.
- ▶ Allow a maximum of 2 m (6 ft) between the instrument AC power inlet and facility power.
- ▶ Never use an extension cord to connect the instrument.

### Coin Cell Battery



The coin cell battery on the instrument computer motherboard is **not** a user-replaceable part. The coin cell battery is **not** rechargeable. Never attempt to recharge the battery.

## Hot Surface Safety Warning



Do not operate the instrument with any of the panels removed.

Do not touch the aluminum thermal block on the thermal stage. The heater used in this area is normally controlled between ambient room temperature (22°C) and 95°C.

Exposure to temperatures at the upper end of this range can result in burns. Operate the instrument only when the lid closed.

## Environmental Considerations

Element	Specification
Temperature	Maintain a lab temperature of 19°C to 25°C (22°C ±3°C). This temperature is the operating temperature of the instrument.
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 a Pollution Degree II environment or better. A Pollution Degree II environment is defined as an environment that normally includes only nonconductive pollutants.
Ventilation	Maximum thermal output is approximately 1700 BTU/h (500 W).

## User-Supplied Consumables

Excepting DECON, the following user-supplied consumables are used for preparation of clustering reagents provided in the HiSeq X<sup>®</sup> and HiSeq<sup>®</sup> 3000/4000 kits. Make sure that you use the appropriate 8-tube strip for your workflow.

The HiSeq X and HiSeq 3000/4000 kits introduce a denaturation step before clustering on the cBot 2. Using these kits, libraries are denatured in the 8-tube strip before adding the ExAmp reaction mix.

Component	Supplier	Purpose
1 N NaOH	General lab supplier	Library denaturation
8-cap strips, flat	Fisher Scientific, catalog # AB-0784	Capping the unlabeled 8-tube strips when not loaded onto the cBot
8-tube strips, 0.2 ml	Fisher Scientific, catalog # AB-0264	ExAmp reaction and library mix on the cBot (clustering without sample tracking workflow)
10 mM Tris-HCl, pH 8.5	General lab supplier	Diluting libraries and an optional PhiX control before denaturation
200 mM Tris-HCl, pH7.0	General lab supplier	Neutralizing libraries and an optional PhiX control after denaturation
cBot 2 Barcoded Strip Tubes (8 wells)	Illumina, catalog # 20005160	ExAmp reaction and library mix on the cBot (clustering with sample tracking workflow)
DECON	General lab supplier	Maintenance wash
Laboratory-grade water	Millipore or General lab supplier	Library denaturation
Microcentrifuge tubes, 1.5 ml	VWR, catalog #20170-038*	Preparing ExAmp Reaction master mix

\*Or equivalent

## Revision History

Document	Date	Description of Change
Document # 15053710 v04	May 2020	Added Tris-Cl 10 mM, pH 8.5 with 0.1% Tween 20 to the list of user-supplied consumables.
Document # 15053710 v03	November 2016	Corrected Illumina catalog # for cBot 2 Barcoded Strip tubes to 20005160.
Document # 15053710 v02	September 2016	Added user-supplied consumables.
Document # 15053710 v01	January 2016	<p>Changed the title of this guide to specify the cBot system. This guide applies to the cBot 2 and cBot.</p> <p>Added the following information:</p> <ul style="list-style-type: none"> <li>• Instrument placement requirements</li> <li>• Instrument connection to protected earth</li> <li>• Hot surface safety warning</li> <li>• Specifications for air quality and ventilation</li> </ul> <p>Replaced instructions for installing the instrument with information about delivery and installation. An Illumina representative installs the cBot system.</p> <p>Updated list of components shipped with the instrument.</p> <p>Removed configuration information and procedures, which are available in the <i>cBot System Configuration Guide (document # 1000000005301)</i>.</p> <p>Removed electrical standards certifications and fuses specifications, which are available in the <i>cBot 2 System Safety and Compliance Guide (document # 15065643)</i>.</p>
Part # 15053710 Rev. B	February 2015	<p>Added information and procedures for configuring the cBot.</p> <p>Removed part number for fuses, which are not user-replaceable.</p> <p>Corrected maximum thermal output listed in environmental constraints for the ventilation condition.</p>
Part # 15053710 Rev. A	April 2014	Initial release.



## 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 Customer Support Telephone Numbers

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North America	+1.800.809.4566	
Australia	+1.800.775.688	
Austria	+43 800006249	+43 19286540
Belgium	+32 80077160	+32 34002973
China	400.066.5835	
Denmark	+45 80820183	+45 89871156
Finland	+358 800918363	+358 974790110
France	+33 805102193	+33 170770446
Germany	+49 8001014940	+49 8938035677
Hong Kong, China	800960230	
Ireland	+353 1800936608	+353 016950506
Italy	+39 800985513	+39 236003759
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Singapore	+1.800.579.2745	
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Spain	+34 911899417	+34 800300143
Sweden	+46 850619671	+46 200883979
Switzerland	+41 565800000	+41 800200442
Taiwan, China	00806651752	
United Kingdom	+44 8000126019	+44 2073057197
Other countries	+44.1799.534000	

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

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



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