applied biosystems by life technologies

QuantStudio™ 6 and 7 Flex Real-Time PCR Systems

SITE PREPARATION

Publication Number 4489824 **Revision** A

This guide contains the information needed to prepare your site for installation of the QuantStudio™ 6 or 7 Flex Real-Time PCR System.

Site preparation workflow

A Life Technologies representative will contact you to schedule the installation. When the installation is scheduled:

1. Receive and inspect the instrument (page 10).
2. Move the crated instrument to the installation site (page 10).
3. Complete the site preparation checklist (page 2).
4. Ensure:
   - The site preparation checklist is complete
   - The purchase order is complete

Installation timeline and training

After the instrument is uncrated by your Life Technologies service representative, installation and testing of the QuantStudio™ 6 or 7 Flex Real-Time PCR System takes approximately 1 business day.

During and/or after installation, the Life Technologies service representative reviews data and provides some basic operator training. For additional training and reference information, see the user documents provided with the instrument.

life technologies™

Site preparation checklist

IMPORTANT! Complete, date, and initial all items in the following checklist before the scheduled installation date. If the site preparation checklist is not complete when the Life Technologies service representative arrives, the scheduled installation may be postponed.

✓	Date	Initials	Site preparation requirement	See page
☐			Customer responsibilities have been reviewed and personnel have been assigned.	3
			The installation site is identified and meets requirements:	
			☐ Space and clearance	4
			☐ Environmental	7
			☐ Electrical	7
			☐ Network	8
			☐ Safety	8
☐			All materials needed for installation and operation are available.	10
☐			The instrument was received and inspected:	
			☐ All items on the shipping list are the same items ordered at the time of purchase.	10
			☐ Any damage to shipping containers was reported to _____.	10
			☐ Any damage or mishandling was recorded on the shipping documents.	10
			☐ The reagents box was unpacked and stored as specified.	10
☐			The installation site is cleared and ready for instrument installation.	10
☐			The crated instrument and other shipping containers are moved to the installation site.	10

Customer responsibilities

Personnel	Responsibilities
Site preparation/ installation coordinator	• Reviews the site preparation guide for safety information and instrument requirements. • Coordinates personnel and tasks. • Orders required materials. • Chooses the site. • Reviews checklists with applicable personnel, then with the Life Technologies service representative to verify that the site is properly prepared. • Receives and inspects the instrument. • Stores the reagents box according to the specifications indicated in the product inserts. • Schedules the installation and informs personnel of the installation day. • Ensures that the site is clear of unnecessary material on the installation day. • Is available to assist the service representative throughout installation.
Laboratory safety representative	• Reviews the site preparation guide for safety information. • Ensures that the required safety practices and equipment are in place. • Is in the vicinity and available to the Life Technologies service representative at all times while the service representative is at the customer's facility.
Laboratory personnel/ primary users	• Review safety information. • Ensures that all customer-provided materials for installation are present at the site. • Ensures that the primary users (responsible for training other users) are available during the installation, so that they can be trained on the instrument.
Facilities personnel	• Ensures that installation requirements are met for: – Space at the installation site – Building clearances – Temperature and humidity – Waste collection – Electrical supply – Computer – Safety and installation materials • If possible, moves the crated instrument to the site before the installation date. • Is available to assist service representative and laboratory personnel throughout installation. • If applicable, ensures that at least two people are available to help the Life Technologies service representative move and position the instrument.
Network or IT specialist (if the instrument will be connected to a network)	• Ensures that one active, tested local area network (LAN) connection is in place before the scheduled installation date. • Ensures that network hardware is compatible with an RJ45-type connector. • If necessary, supplies additional cables. • Is available during installation to connect the instrument to the network. • If applicable, provides and installs a network or dedicated printer. ⚠ **CAUTION!** Do not attempt to connect the instrument components to the network before the Life Technologies service representative arrives.

Site requirements

Dimensions and weights

To prepare for installation, provide space for receipt and configuration of the instrument. This section provides dimensions and weights for the crates and packages you will receive, and it describes the dimensions of the instrument after it has been installed and configured.

IMPORTANT! We do not install, service, or repair Life Technologies instruments in areas designated BioSafety Level 3 (BSL–3) or BioSafety Level 4 (BSL–4).

Crates and packages

⚠ **WARNING! PHYSICAL INJURY HAZARD.** Do not attempt to lift or move the crated instrument without professional assistance. The crated instrument is heavy. Any incorrect lifting or moving of the crated instrument can cause serious injury.

Ensure the building clearances allow for the passage of the QuantStudio™ 6 or 7 Flex Real-Time PCR System crates and packages.

Crate or package	Height	Length (depth)	Width	Weight
QuantStudio™ 6 or 7 Flex Real-Time PCR Instrument	112.5 cm (44.3 in.)	74.7 cm (29.4 in.)	90.7 cm (35.7 in.)	85 kg (187 lb)
Computer	71.1 cm (28 in.)	72 cm (28.5 in.)	43.2 cm (17 in.)	13.6 kg (30 lb)
Monitor	21.6 cm (8.5 in.)	44.4 cm (17.5 in.)	38.1 cm (15 in.)	6.4 kg (14 lb)
Keyboard	4 cm (1.6 in.)	50.0 cm (20 in.)	15.0 cm (6 in.)	1 kg (2.2 lbs)
Twister® Robot (optional)†	97 cm [38 in]	77 cm [28 in]	53.3 cm [21 in]	49.9 kg [110 lbs]

† The Twister® Robot option is available only with the QuantStudio™ 7 Flex Real-Time PCR System.

Components

Ensure that the installation site bench space can accommodate the dimensions and support the weights.

Component	Height	Length (depth)	Width	Weight
QuantStudio™ 6 or 7 Flex Real-Time PCR Instrument	75 cm (29.5 in.)	70 cm (27.6 in.)	53 cm (20.9 in.)	70 kg (154.3 lb) excluding liquids
Computer	56.5 cm (22.3 in.)	54.7 cm (22.4 in.)	21.6 cm (8.5 in.)	10 kg (22 lb)
Monitor	38 cm (15 in.)	13.7 cm (5.4 in.)	37.4 cm (14.7 in.)	3 kg (6.7 lb)
Keyboard	2.75 cm (1.1 in.)	44.5 cm (17.8 in.)	13.75 cm (5.5 in.)	0.75 kg (1.65 lbs)
Twister® Robot (optional)†	97 cm [38 in]	77 cm [28 in]	53.3 cm [21 in]	49.9 kg [110 lbs]

† The Twister® Robot option is available only with the QuantStudio™ 7 Flex Real-Time PCR System.

Configured instrument dimensions

Allow space for the configured instrument. A typical setup is shown in Figure 1 and Figure 2.

Figure 1 Setup requirements (not to scale)

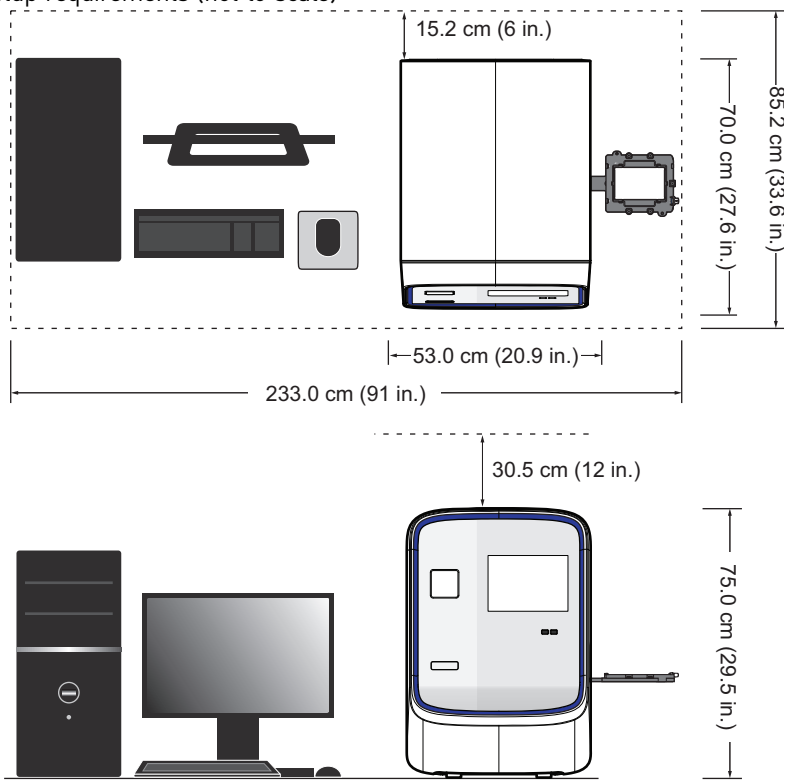
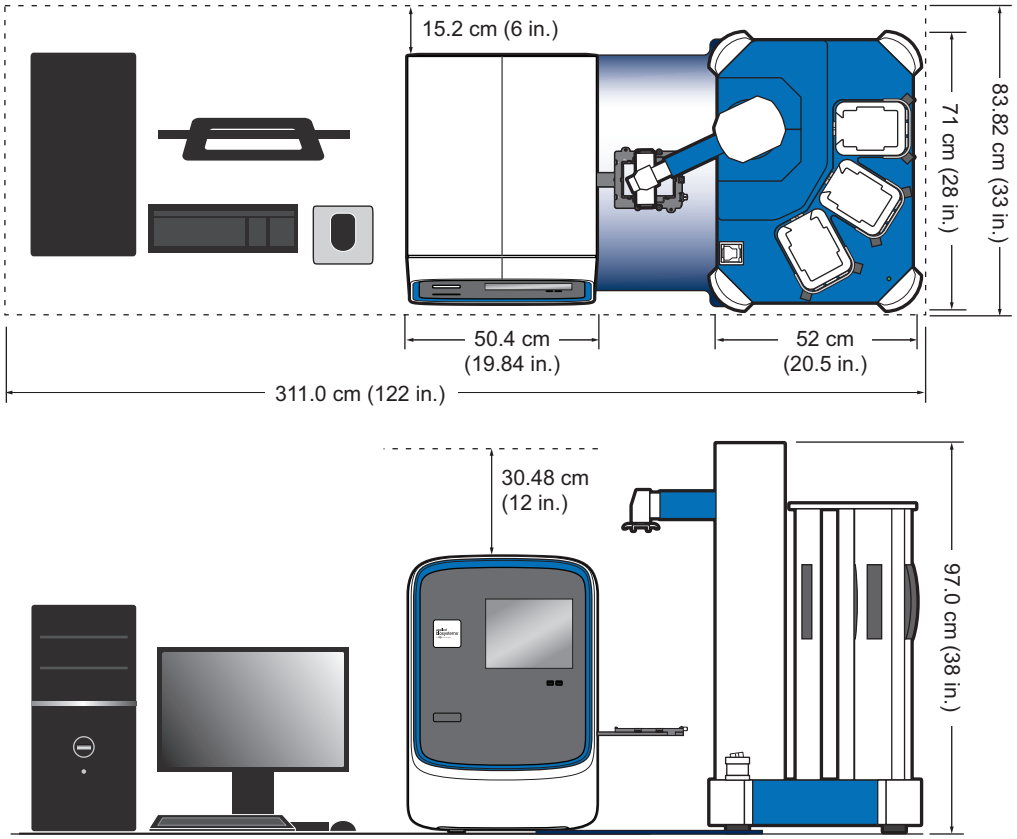


Figure 2 Setup requirements - showing optional robot (not to scale)



Instrument clearances

During instrument setup and maintenance, it is necessary to access the back and sides of the instrument. If the back of the instrument faces a wall, it will be necessary to have enough space to rotate the instrument on the bench for access.

IMPORTANT! For safety, the power outlet used for powering the instrument must be accessible at all times.

Component	Top	Front	Sides	Back
QuantStudio™ 6 or 7 Flex Real-Time PCR Instrument	30.5 cm (12 in.)	122 cm (48 in.)	51 cm (20 in.)	15.2 cm (6 in.)
Computer	—	30.5 cm (12 in.)	—	15.2 cm (6 in.)
Twister® Robot (optional)†	15 cm [6 in.]	15.2 cm (6in.)	51 cm [20 in.]	15.2 cm (6 in.)

† The Twister® Robot option is available only with the QuantStudio™ 7 Flex Real-Time PCR System.

Environmental requirements

Ensure that the installation room is maintained under correct environmental conditions.

Condition	Acceptable range
Installation site	Indoor use only
Altitude	Located between sea level and 6000 ft (~1800 m) above sea level
Humidity	QuantStudio™ 6 or 7 Flex Real-Time PCR Instrument and computer: 15%–80% (noncondensing)
Temperature	15°C to 30°C (60°F to 85°F)
Thermal output	During operation the net thermal output, based on the actual current draw of the QuantStudio™ 6 or 7 Flex Real-Time PCR Instrument and computer, is expected to be approximately 2731 Btu/h [800 W].
Vibration	Do not use this device in close proximity to strong vibration sources, such as a centrifuge, pump, or compressor. Excessive vibration will affect instrument performance.
Electromagnetic interference	Do not use this device in close proximity to sources of strong electromagnetic radiation (for example, unshielded intentional RF sources). Strong electromagnetic radiation may interfere with the proper operation of the device.
Pollution	The instrument has a Pollution Degree rating of II. The instrument may only be installed in an environment that has nonconductive pollutants such as dust particles or wood chips. Typical environments with a Pollution Degree II rating are laboratories, sales, and commercial areas. The noise output of the instrument is <60 dB at idle.
Other conditions	Ensure the room is away from any vents that could expel particulate material on the instrument components. Avoid placing the instrument and computer adjacent to heaters, cooling ducts, or in direct sunlight.

Electrical requirements

CAUTION! Do not unpack or plug in any components until the Life Technologies Field Service Engineers (FSEs) have configured the instrument for the proper operating voltage.

WARNING! For safety, the power outlet used for powering the instrument must be accessible at all times. See "Components" on page 4 for information about the space needed between the wall and the instrument. In case of emergency, you must be able to immediately disconnect the main power supply to all the equipment. Allow adequate space between the wall and the equipment so that the power cords can be disconnected in case of emergency.

Device	Rated voltage	Rated Frequency	Rated Current	Rated Power
QuantStudio™ 6 or 7 Flex Real-Time PCR Instrument	100–240 +/- 10% VAC	50/60 Hz	12.5 A **Note:** 6.3 A in Australia and New Zealand. Fuse to be changed by the FSE during installation.	950 VA
Computer			2.1 A	125 VA
Monitor			1.5 A	65 VA
Twister® Robot (optional)†			2.5 A	150 VA

† The Twister® Robot option is available only with the QuantStudio™ 7 Flex Real-Time PCR System.

Electrical protective devices

Life Technologies recommends several protective devices to protect the instrument in environments with large voltage and power fluctuations.

Device	Description
Power line regulator	Life Technologies recommends the use of a 1.5-kVA power line regulator in areas where the supplied power fluctuates in excess of +/- 10% of the normal voltage. Power fluctuations can adversely affect the function of the instrument and computer. **Note:** A power line regulator monitors the input current and adjusts the power supplied to the instrument or computer. It does not protect against a power surge or failure.
Uninterruptible power supply (UPS)	Life Technologies recommends the use of a 1.5-kVA uninterruptible power supply (UPS), especially in areas prone to power failure. Power failures and other events that abruptly terminate the function of the instrument and computer can corrupt data and possibly damage the system. **WARNING! PHYSICAL INJURY HAZARD.** Do not attempt to lift the UPS unit without assistance (minimum of two people). Improper lifting can cause painful and permanent back injury. Refer to the UPS manufacturer user guide for more information. **IMPORTANT!** UPSs provide power for a limited time. They are meant to delay the effects of a power outage, not to serve as replacement power sources. In the event of a power loss, power off the instrument and computer unless you expect to regain power within the battery life of the UPS.
Surge protector	Life Technologies recommends the use of a 10-kVA surge protector (line conditioner) in areas with frequent electrical storms or near devices that are electrically noisy, such as refrigerators, air conditioners, or centrifuges. Short-duration, high-voltage power fluctuations can abruptly terminate the function of, and thereby damage the components of, the computer and the instrument. **Note:** A dedicated line and ground between the instrument, computer, and the building's main electrical service can also prevent problems caused by power fluctuations.

Network requirements

The computer is factory-configured for the TCP/IP protocol. The product includes a fast Ethernet adapter (10/100 Mbps) with an RJ45-type connector and one 3-m (9.8-ft) crossover Ethernet cable that connects the computer and the instrument.

The computer is factory-configured for the TCP/IP protocol. The product includes a fast Ethernet adapter (10/100 Mbps) with an RJ45-type connector and one 3-m (9.8-ft) crossover Ethernet cable that connects the computer and the instrument.

If the instrument will be connected to a LAN, an active, tested LAN connection must be in place before the scheduled installation date. Due to differences in network connections, the Life Technologies service representative cannot configure the instrument to access a specific network.

You must supply a standard Category 5 Ethernet cable of the required length to connect the computer to your LAN.

Safety requirements

Safety practices

A safety representative from your facility must ensure that:

- Personnel establish and follow all applicable safety practices and policies to protect laboratory personnel from potential hazards
- All applicable safety devices and equipment are available at all times

Required safety equipment

Your laboratory has specific safety practices and policies designed to protect laboratory personnel from potential hazards that are present. Follow all applicable safety-related procedures at all times.

The following safety equipment and protection from hazards must be available at the installation site:

- Protection from any sources of hazardous chemicals, radiation (for example, lasers, radioisotopes, radioactive wastes, and contaminated equipment), and potentially infectious biological material that may be present in the area where the Life Technologies service representative will work.
- Appropriate fire extinguisher:
  - You are responsible for providing an appropriate fire extinguisher for use on or near Life Technologies equipment.
  - The types and sizes of fire extinguishers shall be suitable for use on electrical and chemical fires as specified in current codes, regulations, and/or standards, and with approval of the Fire Marshall or other authority having jurisdiction.
  - The installation of appropriate fire extinguishers shall be in addition to other fire-protection systems and not as a substitute or alternative to them.
- Eyewash
- Safety shower
- Eye and hand protection
- Adequate ventilation, including vent line/fume hood, if applicable
- Biohazard waste container, if applicable
- First-aid equipment
- Spill cleanup equipment
- Applicable Safety Data Sheets (SDSs)

Materials required for installation and operation

Installation

Have the following materials on hand before installation and operation of the instrument.

- Safety glasses, lab coats, and chemical-resistant, disposable gloves (powder-free)
- Glassware washing solution
- Lint-free tissues
- Mobile bench to allow access to the instrument for maintenance and service
- Easily accessible specified power outlet
- External network connection
- Available laboratory equipment
  - Freezer (–20°C)
  - Refrigerator or cold-room (4°C)
  - Vortexer
  - Pipettors

Operation

Additional supplies and consumables are necessary for routine operation of the QuantStudio™ 6 and 7 Flex Real-Time PCR Systems. Contact the Life Technologies sales representative to order these additional supplies. Use only supplies as specified by Life Technologies.

Receive and inspect the shipment

1. Verify that the items shown on the shipping list are the same items that you ordered at the time of purchase.
2. Carefully inspect the shipping containers and report any damage to the Life Technologies service representative. Record any damage or mishandling on the shipping documents.
3. Immediately unpack the reagents box (boxed separately from the instrument components). Store the components as specified.

IMPORTANT! Except for the reagents box, do not unpack QuantStudio™ 6 or 7 Flex Real-Time PCR System shipping containers. This is to protect you from liability if any damage occurred during shipping.

Move the crated instrument to the installation site

1. Clear the installation site of all unnecessary materials.

2. If possible, move the crated instrument and other shipping containers to the installation site. Do not uncrate.

CAUTION! PHYSICAL INJURY HAZARD. Do not attempt to lift or move the instrument without the assistance of others, the use of appropriate moving equipment, and proper lifting techniques. Improper lifting can cause painful and permanent back injury. Depending on the weight, moving or lifting an instrument may require two or more people.

CAUTION! Do not tip the crated instrument on end. Tipping may damage the instrument hardware and electronics.

Related documentation and support

Document	Description
QuantStudio™ 6 and 7 Flex Real-Time PCR Systems Maintenance and Administration Guide	Explains how to maintain and administer the QuantStudio™ 6 and 7 Flex Real-Time PCR Systems.

Obtain SDSs

Safety Data Sheets (SDSs) are available from **www.lifetechnologies.com/sds**

Note: For the SDSs of chemicals not distributed by Life Technologies, contact the chemical manufacturer.

Obtain support

For service and technical support, call Toll-Free in US: 1.800.831.6844.

For the latest services and support information for all locations, go to **www.lifetechnologies.com**, then click the link for Support.

At the Support page, you can:

- Access worldwide telephone and fax numbers to contact Life Technologies Technical Support and Sales facilities
- Search through frequently asked questions (FAQs)
- Submit a question directly to Technical Support
- Order Life Technologies user documents, SDSs, certificates of analysis, and other related documents
- Download PDF documents
- Obtain information about customer training and available instrument service options

The information in this guide is subject to change without notice.

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.**LIMITED USE LABEL LICENSE No. 477: Real-Time PCR System**

Notice to Purchaser: This product is licensed for use under certain patent claims owned by the University of Utah Research Foundation and licensed to BioFire Diagnostics, Inc. No right is conveyed, expressly, by implication or by estoppel under any other patent claim.

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**. If you have any questions, please contact Life Technologies at **www.lifetechnologies.com/support**.

TRADEMARKS

The trademarks mentioned herein are the property of Life Technologies Corporation and/or its affiliate(s), or their respective owners. Twister is a registered trademark of Caliper LIfe Sciences.

Headquarters
5791 Van Allen Way | Carlsbad, CA 92008 USA
Phone +1 760 603 7200 | Toll Free in USA 800 955 6288
For support visit www.lifetechnologies.com/support

www.lifetechnologies.com

October 2013