

QuantStudio™ 6 and 7 Flex Real-Time PCR Systems

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Site preparation workflow

IMPORTANT! Thermo Fisher Scientific does not install, service, or repair products in area designated BioSafety Level 3 (BSL-3) or BioSafety Level 4 (BSL-4).

A Thermo Fisher Scientific representative will contact you to schedule the installation. When the installation is scheduled, perform the following tasks:

Receive and inspect the shipment (page 13)



Move the packaged instrument to the installation site
(page 14)



Site preparation checklist (page 2)

Ensure that the site preparation checklist is complete and that the purchase order is complete.

Installation timeline and training

After the instrument is unpacked by the Thermo Fisher Scientific 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 service representative reviews data and provides some basic operator training. For additional training and reference information, see the user documents provided with the instrument.

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 service representative arrives, the scheduled installation may be postponed.

✓	Date	Initials	Site preparation requirement	See page
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	Customer responsibilities have been reviewed and personnel have been assigned.	3
	<input type="text"/>	<input type="text"/>	The installation site is identified and meets requirements:	
	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Space and clearance	5
	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Environmental	8
	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Electrical	9
	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Network	11
	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Safety	11
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	All materials needed for installation and operation are available.	12
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	The instrument was received and inspected:	
	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> All items on the shipping list are the same items ordered at the time of purchase.	13
	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Any damage to shipping containers was reported to the shipping company that delivered the shipment and to your Thermo Fisher Scientific service representative.	13
	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> Any damage or mishandling was recorded on the shipping documents.	13
	<input type="text"/>	<input type="text"/>	<input type="checkbox"/> The reagents box was unpacked and stored as specified.	13


(continued)

✓	Date	Initials	Site preparation requirement	See page
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	The installation site is cleared and ready for instrument installation.	14
<input type="checkbox"/>	<input type="text"/>	<input type="text"/>	The crated instrument and other shipping containers are moved to the installation site.	14

Customer responsibilities

Personnel	Responsibilities
Site preparation/installation coordinator	<ul style="list-style-type: none"> • 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 Thermo Fisher Scientific 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	<ul style="list-style-type: none"> • 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 Thermo Fisher Scientific service representative at all times while the service representative is at the customer's facility.
Laboratory personnel/primary users	<ul style="list-style-type: none"> • 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.

(continued)

Personnel	Responsibilities
Facilities personnel	<ul style="list-style-type: none"> • Ensures that installation requirements are met for: <ul style="list-style-type: none"> – 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 Thermo Fisher Scientific service representative move and position the instrument.
Network or IT specialist (if the instrument will be connected to a network)	<ul style="list-style-type: none"> • 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. <p> CAUTION! Do not attempt to connect the instrument components to the network before the Thermo Fisher Scientific service representative arrives.</p>

Site requirements

Dimensions and weights

To prepare for installation, provide space for receipt and configuration of the components listed in this section. This section provides dimensions and weights for the packages you will receive, and it describes the dimensions of the components after installation and configuration.

Components (packaged)

Ensure the building clearances allow for transport of the packaged components.

Package	Height	Length (depth)	Width	Weight
Instrument	112.5 cm (44.3 in.)	74.7 cm (29.4 in.)	90.7 cm (35.7 in.)	85 kg (187 lb)
Computer (desktop)	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 lb)
Computer (laptop)	22 cm (8.7 in.)	42 cm (16.5 in.)	59 cm (23.2 in.)	7 kg (15.4 lb)



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.

Components (unpackaged)

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

Component	Height	Length (depth)	Width	Weight
Instrument	75 cm (29.5 in.)	70 cm (27.6 in.)	53 cm (20.9 in.)	70 kg (154.3 lb) excluding liquids
Computer (desktop)	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 lb)
Computer (laptop)	4 cm (1.6 in.)	25 cm (9.8 in.)	38 cm (15.0 in.)	2.5 kg (5.5 lb)

Configured instrument dimensions

Allow space for the configured instrument. A typical setup is shown in Figure 1 on page 7.

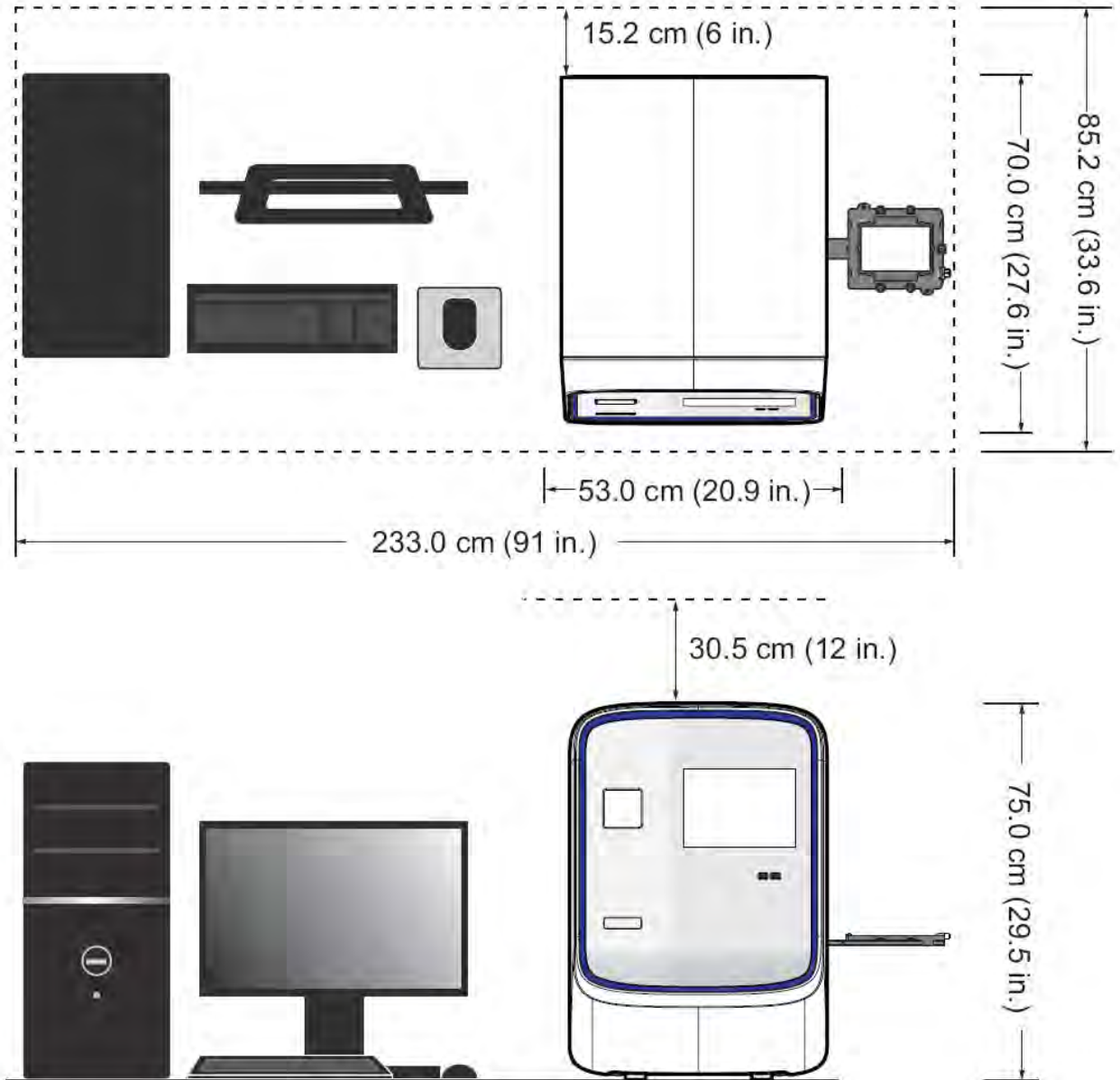


Figure 1 Configured instrument dimensions
Not to scale

Required 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
Instrument	30.5 cm (12.0 in.)	122 cm (48.0 in.)	51.0 cm (20.0 in.)	15.2 cm (6.0 in.)
Computer	—	30.5 cm (12.0 in.)	—	15.2 cm (6.0 in.)

Environmental requirements

Condition	Description
Altitude	Located between sea level and 6000 ft (~1800 m) above sea level
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.
Humidity	15–80% (noncondensing)
Installation site	For indoor use only
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 and sales and commercial areas. The noise output of the instrument is <60 dB at idle.
Temperature	15–30°C (60–85°F)
Thermal output	During operation the net thermal output, based on the actual current draw of the instrument and computer, is expected to be approximately 2731 BTU/hour [800 W].
Vibration	Ensure that the instrument is not adjacent to strong vibration sources, such as a centrifuge, pump, or compressor. Excessive vibration will affect instrument performance.
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



WARNING! For safety, the power outlet used for powering the instrument must be accessible at all times. See “Required clearances” on page 8 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.



CAUTION! Do not unpack or plug in any components until the Thermo Fisher Scientific representative has configured the instrument for the proper operating voltage.

Note: Place the instrument and computer power receptacle on an electrical circuit that is not shared with electrically noisy devices or devices that can cause power surges, such as refrigeration units.

The following table provides electrical specifications for the instrument and associated devices. For all indicated input voltages, a 15 A circuit is required.

Device	Rated current	Rated power	Rated voltage	Rated frequency
Instrument	12.5 A	950 VA	100–240 ± 10% VAC	50/60 Hz
Computer	2.1 A	125 VA		
Monitor	1.5 A	65 VA		

Note: The instrument, monitor, and computer self-adjust for 100–240 V input voltages of 50/60 Hz.

Electrical protective devices

We recommend several protective devices to protect the instrument in environments with large voltage and power fluctuations.

Power line regulator

We recommend the use of a 1.5-kVA power line regulator in areas where the supplied power fluctuates in excess of $\pm 10\%$ of the normal voltage. Power fluctuations can adversely affect the function of the instrument and the 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)

We recommend 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 the 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 the computer, unless you expect to regain power within the battery life of the UPS.

Surge protector

We recommend 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.

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 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.

Firewall ports that must be open

Table 1 v1.6.1 and earlier

Ports	Condition
mDNS, 7000	Instrument-to-computer connection
mDNS, 5353	Instrument discovery

Table 2 v1.7 or later

Ports	Condition
mDNS, 7443	Instrument-to-computer connection
mDNS, 5353	Instrument discovery

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 service representative will work.
- Appropriate fire extinguisher:
 - You are responsible for providing an appropriate fire extinguisher for use on or near the 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 for installation and operation

Installation materials

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 materials

Additional supplies and consumables are necessary for routine operation. Contact a sales representative to order these additional supplies. Use only supplies as specified by Thermo Fisher Scientific.

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. Report any damage to the shipping company and to your 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 the QuantStudio™ 6 or 7 Flex Real-Time PCR System shipping containers. To protect yourself from liability for damage that occurred during shipping, inspect the shipping containers and report damage as described above.

Move the packaged instrument to the installation site

1. Clear the installation site of all unnecessary materials.
2. Move the packaged shipment to the installation site.



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.

Note: After installation, keep the packaging in case you need to relocate the components.

Documentation and support

Related documentation

Document	Pub. No.
<i>QuantStudio™ 6 and 7 Flex Real-Time PCR Systems Maintenance and Administration Guide</i>	4489821
<i>QuantStudio™ 6 and 7 Flex Real-Time PCR Systems Quick Reference</i>	4489826
<i>QuantStudio™ 6 and 7 Flex Real-Time PCR Systems (v1.6.1 or later) Maintenance and Administration Guide</i>	MAN0018828
<i>QuantStudio™ 6 and 7 Flex Real-Time PCR Systems (v1.6.1 or later) Quick Reference</i>	MAN0018829

Customer and technical support

Visit thermofisher.com/support for the latest service and support information.

- Worldwide contact telephone numbers
- Product support information
 - Product FAQs
 - Software, patches, and updates
 - Training for many applications and instruments
- Order and web support
- Product documentation
 - User guides, manuals, and protocols
 - Certificates of Analysis
 - Safety Data Sheets (SDSs; also known as MSDSs)

Note: For SDSs for reagents and chemicals from other manufacturers, contact the manufacturer.

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 at www.thermofisher.com/us/en/home/global/terms-and-conditions.html. If you have any questions, please contact Life Technologies at www.thermofisher.com/support.



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For descriptions of symbols on product labels or product documents, go to thermofisher.com/symbols-definition.

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

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Revision history: Pub. No. 4489824

Revision	Date	Description
B	8 July 2020	<ul style="list-style-type: none"> Updated the site preparation checklist to specify that any damage to the shipping containers is reported to the shipping company and to the Thermo Fisher Scientific service representative. Add the dimensions of a laptop computer to the list of packaged and unpackaged components. Added the firewall ports that must be open. Added instructions to keep the packaging in case the components need to be relocated. Removed electrical requirements specific to Australia and New Zealand. Updated documentation and support (“Documentation and support” on page 15). Removed Twister™ Robot.
A	October 2013	New document.

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