Applied Biosystems 7500/7500 Fast

Real-Time PCR System

Site Preparation Guide

Applied Biosystems

Part Number 4387776 Rev. A
10/2007

Contents

Preface

Safety and EMC Compliance Information

Site Preparation Checklists

Preface

How to Use This Guide

Purpose of This Guide

This guide provides the information you need to fully prepare your site for the arrival and installation of the Applied Biosystems 7500/7500 Fast Real-Time PCR System (7500/7500 Fast system).

Audience

This guide is intended for the personnel who will schedule, manage, and perform the tasks required to prepare your site for installation of the 7500/7500 Fast system.

User Attention Words

Two user-attention words appear in Applied Biosystems user documentation. Each word implies a particular level of observation or action, as described below:

Definitions

Note: Provides information that may be of interest or help but is not critical to the use of the product.

IMPORTANT! Provides information that is necessary for proper instrument operation, accurate chemical installation kit use, or safe use of a chemical.

Examples

Note: Each time you receive a new MSDS, be sure to replace the appropriate MSDS in your files.

IMPORTANT! A safety representative from your facility must ensure that all applicable safety devices and equipment are available.

Safety Alert Words

Safety alert words also appear in user documentation. For more information, see "Safety Alert Words" on page x.

Text Conventions

Italic text indicates new or important words and is also used for emphasis.

For example:

Before analyzing, *always* prepare fresh matrix.

How to Obtain More Information

About the System Documentation

The guides listed below are shipped with the Applied Biosystems 7500 and 7500 Fast Real-Time PCR Systems.

Guide	Purpose and Audience	PN
Applied Biosystems 7500/7500 Fast Real-Time PCR System Getting Started Guide for Genotyping Experiments	Explains how to perform experiments on the 7500/7500 Fast system. Each Getting Started Guide functions as both: • Tutorial, using example experiment data provided with the Applied Biosystems 7500/7500 Fast Real-Time PCR Software (7500/7500 Fast software). • Guide for your own experiments. Intended for laboratory staff and principal investigators who perform experiments using the 7500/7500 Fast system.	4387784
Applied Biosystems 7500/7500 Fast Real-Time PCR System Getting Started Guide for Presence/Absence Experiments		4387785
Applied Biosystems 7500/7500 Fast Real-Time PCR System Getting Started Guide for Relative Standard Curve and Comparative C_T Experiments		4387783
Applied Biosystems 7500/7500 Fast Real-Time PCR System Getting Started Guide for Standard Curve Experiments		4387779
Applied Biosystems 7500/7500 Fast Real-Time PCR System Maintenance Guide	Explains how to install and maintain the 7500/7500 Fast system. Intended for laboratory staff responsible for the installation and maintenance of the 7500/7500 Fast system.	4387777
Applied Biosystems 7500/7500 Fast Real-Time PCR System Computer Setup Guide		4387778
Applied Biosystems 7500/7500 Fast Rea-Time PCR System Reagent Guide	Provides information about the reagents you can use on the 7500/7500 Fast system, including: • An introduction to TaqMan® and SYBR® Green reagents • Descriptions and design guidelines for the following experiment types: – Quantitation experiments – Genotyping experiments – Presence/absence experiments Intended for laboratory staff and principal investigators who perform experiments using the 7500/7500 Fast system.	4387787
Applied Biosystems 7500/7500 Fast Real-Time PCR System Site Preparation Guide	Explains how to prepare your site to receive and install the 7500/7500 Fast system. Intended for personnel who schedule, manage, and perform the tasks required to prepare your site for installation of the 7500/7500 Fast system.	4387776
Applied Biosystems 7500/7500 Fast Real-Time PCR System Installation and Calibration Guide	Explains how to install and initially calibrate the 7500/7500 Fast system. Intended for personnel responsible for the installation and maintenance of the 7500/7500 Fast system.	4387788

Portable document format (PDF) versions of this guide and the Applied Biosystems 7500/7500 Fast Real-Time PCR System Installation Guide, Online Help, and Getting Started Guides are also available on the Applied Biosystems 7500/7500 Fast Real-Time PCR System SDS Software installation CD.

Send Us Your Comments

Applied Biosystems welcomes your comments and suggestions for improving its user documents. You can e-mail your comments to:

techpubs@appliedbiosystems.com

How to Obtain Services and Support

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

At the Support page, you can:

- Search through frequently asked questions (FAQs)
- Submit a question directly to Technical Support
- Order Applied Biosystems user documents, MSDSs, certificates of analysis, and other related documents
- Download PDF documents
- Obtain information about customer training
- Download software updates and patches

In addition, the Support page provides access to worldwide telephone and fax numbers to contact Applied Biosystems Technical Support and Sales facilities.

Safety and EMC Compliance Information

This section includes the following topics:

Safety Conventions Used in This Document

Safety Alert Words

Four safety alert words appear in Applied Biosystems user documentation at points in the document where you need to be aware of relevant hazards. Each alert word–**IMPORTANT, CAUTION, WARNING, DANGER**–implies a particular level of observation or action, as defined below:

Definitions

IMPORTANT! – Indicates information that is necessary for proper instrument operation, accurate chemistry kit use, or safe use of a chemical.

CAUTION – Indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

WARNING – Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury.

DANGER – Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations.

Except for IMPORTANTs, each safety alert word in an Applied Biosystems document appears with an open triangle figure that contains a hazard symbol. *These hazard symbols are identical to the hazard icons that are affixed to Applied Biosystems instruments* (see "Safety Symbols" on page xi).

Examples

The following examples show the use of safety alert words:

IMPORTANT! Wear powder-free gloves when you handle the halogen lamp.

CAUTION The lamp is extremely hot. Do not touch the lamp until it has cooled to room temperature.

WARNING **CHEMICAL HAZARD. Ethanol** is a flammable liquid and vapor. Exposure causes eye, skin, and respiratory tract irritation and may cause central nervous system depression and liver damage. Read the MSDS, and follow the handling instructions. Wear appropriate protective eyewear, clothing, and gloves.

DANGER **ELECTRICAL HAZARD.** Failure to ground the instrument properly can lead to an electrical shock. Ground the instrument according to the provided instructions.

Symbols on Instruments

Electrical Symbols on Instruments

The following table describes the electrical symbols that may be displayed on Applied Biosystems instruments.

Symbol	Description	Symbol	Description
	Indicates the **On** position of the main power switch.		Indicates a terminal that may be connected to the signal ground reference of another instrument. This is not a protected ground terminal.
	Indicates the **Off** position of the main power switch.		Indicates a protective grounding terminal that must be connected to earth ground before any other electrical connections are made to the instrument.
	Indicates a standby switch by which the instrument is switched on to the **Standby** condition. Hazardous voltage may be present if this switch is on standby.		Indicates a terminal that can receive or supply alternating current or voltage.
	Indicates the **On/Off** position of a push-push main power switch.		Indicates a terminal that can receive or supply alternating or direct current or voltage.

Safety Symbols

The following table describes the safety *s*ymbols that may be displayed on Applied Biosystems instruments. Each symbol may appear by itself or in combination with text that explains the relevant hazard (see "Safety Labels on Instruments" on page xii). These safety symbols may also appear next to DANGERS, WARNINGS, and CAUTIONS that occur in the text of this and other product-support documents.

Symbol	Description
	Indicates that you should consult the manual for further information and to proceed with appropriate caution.
	Indicates the presence of an electrical shock hazard and to proceed with appropriate caution.
	Indicates the presence of a hot surface or other high-temperature hazard and to proceed with appropriate caution.
	Indicates the presence of a laser inside the instrument and to proceed with appropriate caution.
	Indicates the presence of moving parts and to proceed with appropriate caution.

Environmental Symbols on Instruments

The following symbol applies to all Applied Biosystems electrical and electronic products placed on the European market after August 13, 2005.

Symbol	Description
	**Do not dispose of this product as unsorted municipal waste.** Follow local municipal waste ordinances for proper disposal provisions to reduce the environmental impact of waste electrical and electronic equipment (WEEE). **European Union customers:** Call your local Applied Biosystems Customer Service office for equipment pick-up and recycling. See **http://www.appliedbiosystems.com** for a list of customer service offices in the European Union.

Safety Labels on Instruments

The following CAUTION, WARNING, and DANGER statements may be displayed on Applied Biosystems instruments in combination with the safety symbols described in the preceding section.

English	Français
CAUTION Hazardous chemicals. Read the Material Safety Data Sheets (MSDSs) before handling.	**ATTENTION** Produits chimiques dangereux. Lire les fiches techniques de sûreté de matériels avant la manipulation des produits.
CAUTION Hazardous waste. Refer to MSDS(s) and local regulations for handling and disposal.	**ATTENTION** Déchets dangereux. Lire les fiches techniques de sûreté de matériels et la régulation locale associées à la manipulation et l'élimination des déchets.
WARNING Hot lamp.	**AVERTISSEMENT** Lampe brûlante.
WARNING Hot. Replace lamp with an Applied Biosystems lamp.	**AVERTISSEMENT** Composants brûlants. Remplacer la lampe par une lampe Applied Biosystems.
CAUTION Hot surface.	**ATTENTION** Surface brûlante.
DANGER High voltage.	**DANGER** Haute tension.
WARNING To reduce the chance of electrical shock, do not remove covers that require tool access. No user-serviceable parts are inside. Refer servicing to Applied Biosystems qualified service personnel.	**AVERTISSEMENT** Pour éviter les risques d'électrocution, ne pas retirer les capots dont l'ouverture nécessite l'utilisation d'outils. L'instrument ne contient aucune pièce réparable par l'utilisateur. Toute intervention doit être effectuée par le personnel de service qualifié de Applied Biosystems.
CAUTION Moving parts.	**ATTENTION** Parties mobiles.
WARNING This instrument is designed for 12V, 75W Halogen lamps only.	**AVERTISSEMENT** Cet instrument est conçu pour des lampes d'halogène de 12V et 75W seulement.

Locations of Warnings

The Applied Biosystems 7500/7500 Fast Real-Time PCR System contain warnings at the locations shown below.

General Instrument Safety

WARNING **PHYSICAL INJURY HAZARD.** Use this product only as specified in this document. Using this instrument in a manner not specified by Applied Biosystems may result in personal injury or damage to the instrument.

Moving and Lifting the Instrument

CAUTION **PHYSICAL INJURY HAZARD.** The instrument is to be moved and positioned only by the personnel or vendor specified in the applicable site preparation guide. If you decide to lift or move the instrument after it has been installed, 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 persons.

Moving and Lifting Stand-Alone Computers and Monitors

WARNING Do not attempt to lift or move the computer or the monitor without the assistance of others. Depending on the weight of the computer and/or the monitor, moving them may require two or more people.

Things to consider before lifting the computer and/or the monitor:

- Make sure that you have a secure, comfortable grip on the computer or the monitor when lifting.
- Make sure that the path from where the object is to where it is being moved is clear of obstructions.
- Do not lift an object and twist your torso at the same time.
- Keep your spine in a good neutral position while lifting with your legs.
- Participants should coordinate lift and move intentions with each other before lifting and carrying.
- Instead of lifting the object from the packing box, carefully tilt the box on its side and hold it stationary while someone slides the contents out of the box.

Operating the Instrument

Ensure that anyone who operates the instrument has:

- Received instructions in both general safety practices for laboratories and specific safety practices for the instrument.
- Read and understood all applicable Material Safety Data Sheets (MSDSs). See "About MSDSs" on page xv.

WARNING **PHYSICAL INJURY HAZARD.** Use this instrument as specified by Applied Biosystems. Using this instrument in a manner not specified by Applied Biosystems may result in personal injury or damage to the instrument.

Cleaning or Decontaminating the Instrument

CAUTION Before using a cleaning or decontamination method other than those recommended by the manufacturer, verify with the manufacturer that the proposed method will not damage the equipment.

Chemical Safety

Chemical Hazard Warning

WARNING **CHEMICAL HAZARD.** Before handling any chemicals, refer to the Material Safety Data Sheet (MSDS) provided by the manufacturer, and observe all relevant precautions.

WARNING **CHEMICAL HAZARD.** All chemicals in the instrument, including liquid in the lines, are potentially hazardous. Always determine what chemicals have been used in the instrument before changing reagents or instrument components. Wear appropriate eyewear, protective clothing, and gloves when working on the instrument.

WARNING **CHEMICAL STORAGE HAZARD.** Never collect or store waste in a glass container because of the risk of breaking or shattering. Reagent and waste bottles can crack and leak. Each waste bottle should be secured in a low-density polyethylene safety container with the cover fastened and the handles locked in the upright position. Wear appropriate eyewear, clothing, and gloves when handling reagent and waste bottles.

About MSDSs

Chemical manufacturers supply current Material Safety Data Sheets (MSDSs) with shipments of hazardous chemicals to *new* customers. They also provide MSDSs with the first shipment of a hazardous chemical to a customer after an MSDS has been updated. MSDSs provide the safety information you need to store, handle, transport, and dispose of the chemicals safely.

Each time you receive a new MSDS packaged with a hazardous chemical, be sure to replace the appropriate MSDS in your files.

Obtaining MSDSs

You can obtain from Applied Biosystems the MSDS for any chemical supplied by Applied Biosystems. This service is free and available 24 hours a day.

To obtain MSDSs:

1. Go to **www.appliedbiosystems.com**, click **Support**, then click **MSDS Search**.
2. In the Keyword Search field, enter the chemical name, product name, MSDS part number, or other information that appears in the MSDS of interest. Select the language of your choice, then click **Search**.
3. Find the document of interest, right-click the document title, then select any of the following:
   - **Open** – To view the document
   - **Print Target** – To print the document
   - **Save Target As** – To download a PDF version of the document to a destination that you choose

Note: For the MSDSs of chemicals not distributed by Applied Biosystems, contact the chemical manufacturer.

Chemical Safety Guidelines

To minimize the hazards of chemicals:

- Read and understand the Material Safety Data Sheets (MSDSs) provided by the chemical manufacturer before you store, handle, or work with any chemicals or hazardous materials. (See "About MSDSs" on page xv.)
- Minimize contact with chemicals. Wear appropriate personal protective equipment when handling chemicals (for example, safety glasses, gloves, or protective clothing). For additional safety guidelines, consult the MSDS.
- Minimize the inhalation of chemicals. Do not leave chemical containers open. Use only with adequate ventilation (for example, fume hood). For additional safety guidelines, consult the MSDS.
- Check regularly for chemical leaks or spills. If a leak or spill occurs, follow the manufacturer's cleanup procedures as recommended on the MSDS.
- Comply with all local, state/provincial, or national laws and regulations related to chemical storage, handling, and disposal.

Chemical Waste Safety

Chemical Waste Hazard

CAUTION **HAZARDOUS WASTE.** Refer to Material Safety Data Sheets and local regulations for handling and disposal.

WARNING **CHEMICAL WASTE HAZARD.** Wastes produced by Applied Biosystems instruments are potentially hazardous and can cause injury, illness, or death.

WARNING **CHEMICAL STORAGE HAZARD.** Never collect or store waste in a glass container because of the risk of breaking or shattering. Reagent and waste bottles can crack and leak. Each waste bottle should be secured in a low-density polyethylene safety container with the cover fastened and the handles locked in the upright position. Wear appropriate eyewear, clothing, and gloves when handling reagent and waste bottles.

Chemical Waste Safety Guidelines

To minimize the hazards of chemical waste:

- Read and understand the Material Safety Data Sheets (MSDSs) provided by the manufacturers of the chemicals in the waste container before you store, handle, or dispose of chemical waste.
- Provide primary and secondary waste containers. (A primary waste container holds the immediate waste. A secondary container contains spills or leaks from the primary container. Both containers must be compatible with the waste material and meet federal, state, and local requirements for container storage.)
- Minimize contact with chemicals. Wear appropriate personal protective equipment when handling chemicals (for example, safety glasses, gloves, or protective clothing). For additional safety guidelines, consult the MSDS.
- Minimize the inhalation of chemicals. Do not leave chemical containers open. Use only with adequate ventilation (for example, fume hood).For additional safety guidelines, consult the MSDS.
- Handle chemical wastes in a fume hood.
- After emptying the waste container, seal it with the cap provided.
- Dispose of the contents of the waste tray and waste bottle in accordance with good laboratory practices and local, state/provincial, or national environmental and health regulations.

Waste Disposal

If potentially hazardous waste is generated when you operate the instrument, you must:

- Characterize (by analysis if necessary) the waste generated by the particular applications, reagents, and substrates used in your laboratory.
- Ensure the health and safety of all personnel in your laboratory.
- Ensure that the instrument waste is stored, transferred, transported, and disposed of according to all local, state/provincial, and/or national regulations.

IMPORTANT! Radioactive or biohazardous materials may require special handling, and disposal limitations may apply.

Electrical Safety

ELECTRICAL SHOCK HAZARD. Severe electrical shock can result from operating the Applied Biosystems 7500/7500 Fast Real-Time PCR System without its instrument panels in place. Do not remove instrument panels. High-voltage contacts are exposed when instrument panels are removed from the instrument.

Fuses

FIRE HAZARD. Improper fuses or high-voltage supply can damage the instrument wiring system and cause a fire. Before turning on the instrument, verify that the fuses are properly installed and that the instrument voltage matches the power supply in your laboratory.

FIRE HAZARD. For continued protection against the risk of fire, replace fuses only with fuses of the type and rating specified for the instrument.

Power

ELECTRICAL HAZARD. Grounding circuit continuity is vital for the safe operation of equipment. Never operate equipment with the grounding conductor disconnected.

ELECTRICAL HAZARD. Use properly configured and approved line cords for the voltage supply in your facility.

ELECTRICAL HAZARD. Plug the system into a properly grounded receptacle with adequate current capacity.

Overvoltage Rating

The Applied Biosystems 7500/7500 Fast Real-Time PCR System has an installation (overvoltage) category of II, and is classified as portable equipment.

Physical Hazard Safety

Moving Parts

PHYSICAL INJURY HAZARD. Moving parts can crush and cut. Keep hands clear of moving parts while operating the instrument. Disconnect power before servicing the instrument.

Biological Hazard Safety

General Biohazard

BIOHAZARD. Biological samples such as tissues, body fluids, and blood of humans and other animals have the potential to transmit infectious diseases. Follow all applicable local, state/provincial, and/or national regulations. Wear appropriate protective eyewear, clothing, and gloves. Read and follow the guidelines in these publications:

- U.S. Department of Health and Human Services guidelines published in *Biosafety in Microbiological and Biomedical Laboratories* (stock no. 017-040-00547-4; **http://bmbl.od.nih.gov**)
- Occupational Safety and Health Standards, Bloodborne Pathogens (29 CFR§1910.1030; **http://www.access.gpo.gov/nara/cfr/waisidx_01/29cfr1910a_01.html**).

Additional information about biohazard guidelines is available at: **http://www.cdc.gov**

Workstation Safety

Correct ergonomic configuration of your workstation can reduce or prevent effects such as fatigue, pain, and strain. Minimize or eliminate these effects by configuring your workstation to promote neutral or relaxed working positions.

MUSCULOSKELETAL AND REPETITIVE MOTION HAZARD. These hazards are caused by potential risk factors that include but are not limited to repetitive motion, awkward posture, forceful exertion, holding static unhealthy positions, contact pressure, and other workstation environmental factors.

To minimize musculoskeletal and repetitive motion risks:

- Use equipment that comfortably supports you in neutral working positions and allows adequate accessibility to the keyboard, monitor, and mouse.
- Position the keyboard, mouse, and monitor to promote relaxed body and head postures.

Safety and Electromagnetic Compatibility (EMC) Standards

This section provides information on:

U.S. and Canadian Safety Standards

This instrument has been tested to and complies with standard UL 61010A-1, "Safety Requirements for Electrical Equipment for Laboratory Use, Part 1: General Requirements" and with standard UL 61010-2-010, "Particular Requirements for Laboratory Equipment for the Heating of Materials."

This instrument has been tested to and complies with standard CSA 1010.1, "Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use, Part 1: General Requirements."

Canadian EMC Standard

This instrument has been tested to and complies with ICES-001, Issue 3: Industrial, Scientific, and Medical Radio Frequency Generators.

European Safety and EMC Standards

Safety

This instrument meets European requirements for safety (Low Voltage Directive 2006/95/EC). This instrument has been tested to and complies with standards EN 61010-1:2001, "Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use, Part 1: General Requirements" and EN 61010-2-010, "Particular Requirements for Laboratory Equipment for the Heating of Materials," and with standard EN 61010-2-081:2002+A1:2003 "Particular Requirements for Automatic and Semi-Automatic Laboratory Equipment for Analysis and Other Purposes."

EMC

This instrument meets European requirements for emission and immunity (EMC Directive 2004/108/EC). This instrument has been tested to and complies with standard EN 61326 (Group 1, Class B), "Electrical Equipment for Measurement, Control and Laboratory Use – EMC Requirements."

Australian EMC Standards

This instrument has been tested to and complies with standard AS/NZS 2064, "Limits and Methods Measurement of Electromagnetic Disturbance Characteristics of Industrial, Scientific, and Medical (ISM) Radio-frequency Equipment."

Site Preparation Checklists

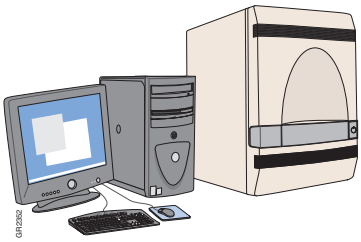
In This Section

7500/7500 Fast System Overview

System Components

The Applied Biosystems 7500/7500 Fast Real-Time PCR System includes the:

- 7500/7500 Fast instrument
- Computer
- Monitor
- Keyboard
- Connector cables



Halogen Lamp

The 7500/7500 Fast system is shipped with a halogen lamp.

WARNING This 7500/7500 Fast instrument is designed for 12 V, 75 W halogen lamps only (available from Applied Biosystems).

Preparing the Site

Before you install the Applied Biosystems 7500/7500 Fast Real-Time PCR System, you must prepare your site for the installation according to the instructions in this guide. The general site preparation tasks and a suggested sequence for completing the tasks are summarized below. The sequence can vary, but always:

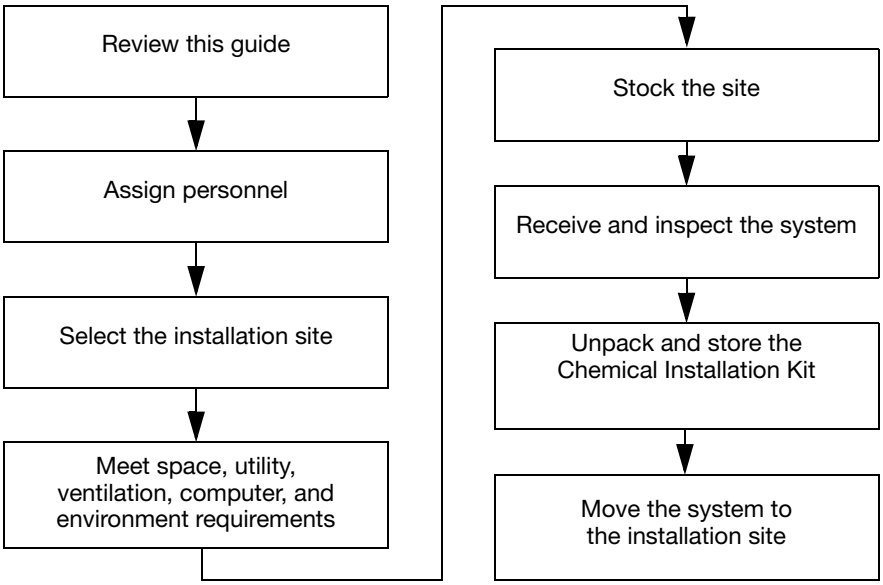
- Review this guide first.
- Unpack and store the Applied Biosystems 7500/7500 Fast Real-Time PCR System Chemical Installation Kit as soon as you receive it.

IMPORTANT! If site preparation tasks are not complete when the Applied Biosystems service representative arrives, the scheduled installation may be postponed.

Site Preparation Procedure

The general site preparation tasks and a suggested sequence for completing the tasks are summarized below. The sequence can vary, but always:

- Review this guide first.
- Unpack and store the Chemical Installation Kit as soon as you receive it.



During the Installation

After the 7500/7500 Fast system is uncrated, the installation can take

- 6 hours to set up the Applied Biosystems 7500 Real-Time PCR System
- 4 hours to set up the Applied Biosystems 7500 Fast Real-Time PCR System

When the 7500/7500 Fast system reaches proper operating status, the Applied Biosystems service representative returns to perform installation qualification tests.

Site Preparation Checklists

Use the checklists on the following pages to help schedule and manage the site-preparation process. Each checklist describes requirements that must be met before installation of 7500/7500 Fast system.

Minimizing the Installation Time

To minimize the time between the shipment arrival and system installation:

1. Complete the site preparation tasks and fill out the corresponding checklists.
2. Verify that:
   - All checklists are complete.
   - The purchase order is complete.
   - You have considered all components and options in preparing the site.

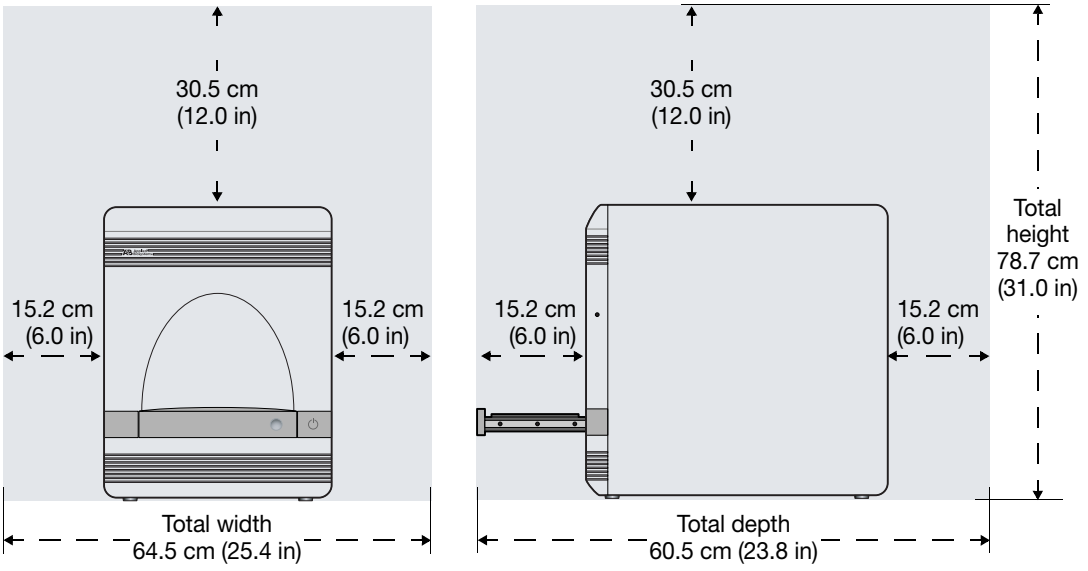
Personnel Requirements Checklist

This checklist suggests the personnel to accomplish all site-preparation tasks. Date each item below after identifying the person responsible.

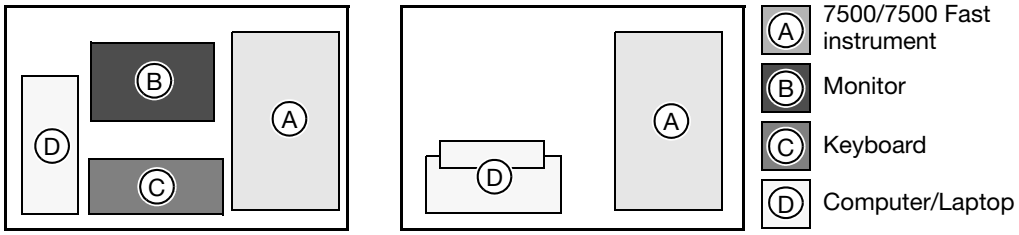
Date Verified	Required Personnel and Responsibilities
	Site Preparation/ Installation Coordinator • Is available throughout installation of the 7500/7500 Fast instrument. • Reviews the site preparation guide for safety information and system requirements. • Reviews the site preparation guide checklists with applicable personnel, then with the Applied Biosystems service representative to verify that the site is properly prepared. • Coordinates personnel and tasks. – Schedules the installation and informs personnel of the installation date. – Ensures that the site is clear of unnecessary material on the installation day. • Orders required materials. • Chooses the site. • Receives and inspects the system. • Stores the 7500/7500 Fast system Chemical Installation Kit.
	Laboratory Safety Representative • Is available throughout unpacking and setup of the 7500/7500 Fast instrument. • Reviews the site preparation guide for safety information. • Ensures that the required safety practices and equipment are in place. **IMPORTANT!** Applied Biosystems requests that a representative from your laboratory be in the vicinity and available to the Applied Biosystems service representative at all times during the installation. The laboratory safety representative should be familiar with laboratory safety procedures and know the location of all the safety equipment.
	Laboratory Personnel – The primary users to be trained and to subsequently train other users. • Ensure that all customer-provided materials for installation are present at the site. • Review safety information.
	Facilities Personnel (Two People) • Are available throughout installation. • Provide installation requirements for environmental, electrical, and computer site-preparation requirements. • Ensure that installation requirements are met for: – Space at the installation site – Building clearances – Temperature and humidity – Ventilation and waste collection – Electrical supply – Computer – Safety and installation materials • If possible, move the crated 7500/7500 Fast system to the site before the installation date. • Help move and position the 7500/7500 Fast instrument during the installation.

Spatial Requirements Checklist

Date each item below after verifying its completion.

<table>
<tr><th>Date Verified</th><th>Requirement</th></tr>
<tr><td></td><td>
System Component Dimension and Weight Requirements
Verify that the installation site (floor space and/or bench space) can accommodate the dimensions and weights indicated below.
<table>
<tr><th>Component</th><th>Width, cm (in)</th><th>Depth, cm (in)</th><th>Height, cm (in)</th><th>Weight, kg (lbs)</th></tr>
<tr><td>7500/7500 Fast Instrument</td><td>34 (13.4)</td><td>45 (17.8)</td><td>49 (19.3)</td><td>• 7500 – 34.1 (75.0)
• 7500 Fast – 34.1 (75.0)</td></tr>
<tr><td>Computer (laptop)</td><td>31.5 (12.4)</td><td>25.7 (10.1)</td><td>28.7 (11.3)</td><td>2.27 (5)</td></tr>
<tr><td>Computer (desktop)</td><td>19.1 (7.5)</td><td>42.7 (16.8)</td><td>45.0 (17.7)</td><td>6.8 (15.0)</td></tr>
<tr><td>Monitor</td><td>43.2 (17)</td><td>25.4 (10)</td><td>45.7 (18)</td><td>6.8 (15.0)</td></tr>
<tr><td>Keyboard</td><td>45.7 (18)</td><td>17.8 (7)</td><td>5.1 (2)</td><td>0.9 (2.0)</td></tr>
</table>
</td></tr>
<tr><td></td><td>
Clearance Requirements
Verify that the location meets the clearance requirements:
• Clearance on all sides – At least 15.2 cm (6 in) of clearance for ventilation, service access, and cable routing. Allow space for the Applied Biosystems service representative to move the instrument for easy access to the back and sides.
• Vertical clearance – At least 30.5 cm (12 in) of unobstructed vertical clearance above the top of the 7500/7500 Fast system to allow the top to be lifted during service.
Note: In the following figure, the shaded region (□) around the 7500/7500 Fast instrument indicates the required clearance (empty space).


</td></tr>
</table>

Date Verified	Requirement
	Layout Requirements Verify that the installation location: • Is not adjacent to heaters, cooling ducts, or in direct sunlight. • Allows the computer to be within 2 m (6 ft) of the instrument. • Allows positioning the monitor, keyboard, and accessories for proper ergonomics during use.  Tower computer Laptop computer
	Computer Ergonomic Requirements Verify that the computer workspace allows for proper ergonomics during use.

Environmental Requirements Checklist

Date each item below after verifying its completion.

Date Verified	Requirement
	Altitude Requirement Verify that the altitude does not exceed 2000 m (6500 ft). The 7500/7500 Fast system is for indoor use only and for altitudes not exceeding 2000 m (6500 ft) above sea level.
	Temperature and Humidity Requirements Verify that the installation site is maintained at: • **Temperature**: 15 to 30 °C (50 to 95 °F). Maximum change of less than 15 degrees Celsius (59 degrees Fahrenheit) per 24 hrs • **Humidity**: 20 to 80% relative humidity, noncondensing Avoid placing the system adjacent to heaters, cooling ducts, or in direct sunlight. Fluctuations between day and night temperatures can cause system instability. **IMPORTANT!** The temperature and humidity conditions must be maintained even when the 7500/7500 Fast system is not in use.
	Pollution Requirement Verify that the location does not exceed Pollution Degree II - Only nonconductive pollutants, if any, are present. The 7500/7500 Fast system has a pollution degree rating of II and may be installed in an environment that has nonconductive pollutants (dust, wood chips, and so on) only. Typical environments with Pollution Degree II ratings are laboratory, sales, and commercial areas. **Note:** Pollutants may negatively affect the performance of the 7500/7500 Fast instrument.

Ventilation and Waste Collection Requirements Checklist

Date each item below after verifying its completion.

Date Verified	Requirement
	Instrument Hot-Air Exhaust Venting Verify that one of the following conditions exists: • Facilities personnel have certified that the normal room ventilation system can maintain room temperature if the maximum thermal output of the 7500/7500 Fast system (see below) is vented directly into the room air. Hot-air exhaust is vented from the 7500/7500 Fast instrument through the hot-air waste port on the rear panel. The hot-air exhaust is designed to dissipate heat produced by the instrument. The maximum thermal output of the 7500/7500 Fast instrument is 3241.5 Btu/h (950 W). Consult your facilities department to determine if the laboratory ventilation system can maintain room temperature with this level of thermal output. If it can maintain room temperature during instrument operation, the hot-air exhaust port can be vented directly to room air. • A suitable venting device such as a fume hood or fume duct is available to vent the hot air exhaust from the instrument space.

Electrical Requirements Checklist

Date each item after verifying its completion.

<table>
<tr><th>Date Verified</th><th>Requirement</th></tr>
<tr><td></td><td>Main Power Supply
Verify that the main power supply to the 7500/7500 Fast instrument can be immediately disconnected.
Note: In case of emergency, you must be able to immediately disconnect the main power supply to the 7500/7500 Fast instrument.</td></tr>
<tr><td></td><td>Power Connectors and Receptacles
Verify that grounded power receptacles are available to support the electrical requirements shown below.
<table>
<tr><th>Location</th><th>Input Voltage (VAC)</th><th>Frequency (Hz)</th><th>Nominal Current Draw (A)</th><th>Power (W)</th></tr>
<tr><td>Japan</td><td>100</td><td>50/60</td><td>9</td><td>950</td></tr>
<tr><td>USA/Canada</td><td>120</td><td>50/60</td><td>8</td><td>950</td></tr>
<tr><td>EC</td><td>220</td><td>50/60</td><td>4</td><td>950</td></tr>
<tr><td>UK/Australia</td><td>240</td><td>50/60</td><td>4</td><td>950</td></tr>
</table>
The 7500/7500 Fast system can be configured for operating voltages between 100 and 240 VAC at 50 or 60 Hz. The system is equipped with a universal power supply. The instrument requires a 15 A circuit for all indicated input voltages.
IMPORTANT! The 7500/7500 Fast system is shipped to customers with up to three power connectors. These connectors require standard 15 A wall receptacles with proper grounding. Do not use extension cords.
Note: At 110 V, the computer monitor has a nominal current draw of 0.9 A; at 240 V, the current draw is 0.4 A.</td></tr>
</table>

Date Verified	Requirement
	Power Line Regulator Verify that a power line regulator is available if the voltage of the supplied power often fluctuates more than ±10% of the nominal value. **IMPORTANT!** High and low voltages can adversely affect the electronic components of the 7500/7500 Fast instrument.

Computer Requirements Checklist

Date each item after verifying its completion.

Date Verified	Requirement
	Recommended Computer If you did not purchase a computer from Applied Biosystems, verify that one is available that meets the following requirements: • 2 GHz Pentium processor • USB port, v. 2.0 • 10.0 GB hard disk storage • 1 GB of RAM • Windows® XP or Vista® Operating Systems • UL listed and/or equivalent safety mark (such as TUV, VDE, BSI, CSA) or CE marking on product **Minimum Computer*** The following specifications are the minimum requirements to run 7500/7500 Fast software: • 1.2 GHz Pentium processor** • USB port, v. 1.1 • 10.0 GB hard disk storage • 1 GB of RAM*** • Windows® XP SP1 * Expect reduced performance if the computer does not meet the recommended requirements. ** Software will not operate on a system with a processor speed that is less than 1.2 GHz. ***Software will not operate on a system with memory that is less than 512 MB.
	(Optional) Network Cables The computer is factory configured for the TCP/IP protocol, and includes a fast Ethernet® adapter (10/100baseT) with an RJ45-type connector. Applied Biosystems requires that you use a USB 1.1 connector from the 7500/7500 Fast instrument to the computer. **IMPORTANT!** Do not use the 7500/7500 Fast system on a wireless network. A wireless network may interfere with data collection, resulting in data loss.
	(Optional) Antivirus Software and Antispyware Verify that the antivirus software and antispyware is available for loading on the system computer. **IMPORTANT!** You must disable or deactivate antivirus software and antispyware during use of the 7500/7500 Fast instrument. Antivirus and antispyware monitoring can interfere with 7500/7500 Fast system data collection, resulting in data loss.
	(Optional) Printer Verify that a network printer or a dedicated printer and necessary print drivers are available. The 7500/7500 Fast system can use a network or dedicated printer.

Safety Materials and Equipment Checklist

Date each item below after verifying its completion.

Date Verified	Requirement
	BioSafety Verify that the site is not designated BioSafety level 3 (BSL-3) or BioSafety level 4 (BSL-4). **IMPORTANT!** Applied Biosystems does not install, service, or repair Applied Biosystems instruments in areas designated BSL-3 or BSL-4.
	Safety Practices Your laboratory has specific safety practices and policies designed to protect laboratory personnel from potential hazards. Applied Biosystems expects that you will follow all applicable safety-related procedures at all times. Verify that the safety practices and policies to protect laboratory personnel from potential hazards are in place and are followed. **IMPORTANT!** A safety representative from your facility must ensure that: • All applicable safety practices and policies to protect laboratory personnel from potential hazards are established and are followed by personnel. • All applicable safety devices and equipment are available.
	Safety Equipment Check (✓) the box next to the safety equipment that is 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 is in place ☐ Appropriate fire extinguisher ☐ Eye and hand protection ☐ Eyewash ☐ Safety shower ☐ Vent lines/fume hood, if applicable ☐ Biohazard waste container, if applicable ☐ First-aid equipment ☐ Spill cleanup equipment ☐ MSDSs readily available

Materials Checklist

Date each item below after verifying its completion.

Date Verified	Requirement
	Safety Equipment The following safety protection and equipment must be available at the installation site. Check (✓) the box next to the safety equipment that is 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 in the area where the Applied Biosystems service representative will work ☐ Appropriate fire extinguisher: – You are responsible for providing an appropriate fire extinguisher for use on or near Applied Biosystems 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 MSDSs
	General Installation Materials Check (✓) the box next to the materials that are at the installation site: ☐ Safety glasses and lab coats ☐ Chemical-resistant disposable gloves (powder free) ☐ Lint-free tissues ☐ Ethanol, HPLC-grade or better ☐ Isopropanol, HPLC-grade or better ☐ 10% bleach solution ☐ Water, Milli-Q® grade ☐ Three sizes of micropipettors and tips: – 1- to 10-µL – 10- to 100-µL – 100- to 1,000-µL ☐ A mini vortexer, centrifuge (equipped to accept reaction plates), and sample tubes
	Routine Operation Materials Materials for routine operation after installation are available or have been ordered. Additional supplies and consumables are necessary for routine operation of the 7500/7500 Fast system. Before the system is installed, contact the Applied Biosystems sales representative to order these additional supplies.

System Receipt and Inspection Checklist

Date each item below after verifying its completion.

Date Verified	Action
	Inspecting Crates for Damage Carefully inspect the crates and boxes; report any damage to the Applied Biosystems service representative or your local technical support group if you are conducting a self-installation.
	Unpacking and Storing the Chemical Installation Kit The Chemical Installation Kit is boxed separately from the instrument components. When you receive the shipment, unpack the Chemical Installation Kit immediately. Store the components as specified in the instructions included with the kit. **WARNING** **CHEMICAL HAZARD.** Some chemicals used with Applied Biosystems instruments are potentially hazardous and can cause injury, illness, or death. Read and understand the Material Safety Data Sheets (MSDSs) provided by the chemical manufacturer before you store, handle, work with, or dispose of any chemicals or hazardous materials.
	Shipped Contents Verify that the items on the packing list are those that were ordered. Otherwise, report to the Applied Biosystems service representative any discrepancies in the packing list. Check (✓) the box next to the 7500/7500 Fast system materials that you have received: ☐ Applied Biosystems 7500/7500 Fast Real-Time PCR Instrument(s) ☐ Accessories ☐ Chemical Installation Kit ☐ Software Kit The following are included: ☐ Computer tower, monitor, keyboard, and mouse or ☐ Laptop and mouse
	Open and store the Applied Biosystems 7500/7500 Fast Real-Time PCR System Chemical Installation Kit components as specified in the kit operating instructions.
	Receive the 7500/7500 Fast system and inspect the crates and boxes for mishandling or damage. **IMPORTANT!** Except for the Chemical Installation Kit, *do not* open any crates or boxes.
	Report to the Applied Biosystems service representative: • Any damage to the crates or boxes. • Tip indicators or shock indicators that show evidence of mishandling during transit.

Moving the Crated Instrument Checklist

Date each item below after verifying its completion.

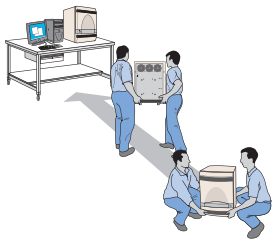
Date Verified	Item
	Verify that the building clearances allow passage of the crate dimensions shown below. The largest crate included with the 7500/7500 Fast system shipment contains the 7500/7500 Fast instrument. If the crate dimensions exceed building clearances, contact the Applied Biosystems service representative. Do not unpack the crate without authorization. **Crate Dimension** / **Minimum Building Clearance** Height: 88.9 cm (35.0 in) Length: 86.4 cm (34.0 in) Depth: 50.8 cm (20.0 in)
	If possible, move all the crated equipment, excluding the crated 7500/7500 Fast system, to the laboratory before the date of the scheduled installation. **WARNING** **PHYSICAL INJURY HAZARD.** Do not attempt to lift or move any boxed or crated items unless you have received related training. Incorrect lifting can cause painful and sometimes permanent back injury. Use proper lifting techniques when lifting or moving items. No attempt should be made to lift the instrument.
	Clear the installation site of all unnecessary materials.

Moving the System

Before the date of installation:

- Clear the installation site of all unnecessary materials.
- If possible, move the crated 7500/7500 Fast instrument from the receiving area to the installation site.
- If possible, move the other crated and boxed equipment from the shipping area to the installation site.

CAUTION **PHYSICAL INJURY HAZARD.** If you decide to lift or move the instrument after it has been installed, 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 persons.



CAUTION Do not tip the 7500/7500 Fast instrument on end. Tipping damages the 7500/7500 Fast instrument hardware and electronics.

Worldwide Sales and Support

Applied Biosystems vast distribution and service network, composed of highly trained support and applications personnel, reaches 150 countries on six continents. For sales office locations and technical support, please call our local office or refer to our Web site at **www.appliedbiosystems.com**.

Applera is committed to providing the world's leading technology and information for life scientists. Applera Corporation consists of the Applied Biosystems and Celera Genomics businesses.

Headquarters
850 Lincoln Centre Drive
Foster City, CA 94404 USA
Phone: +1 650.638.5800
Toll Free (In North America): +1 800.345.5224
Fax: +1 650.638.5884

10/2007

Applied Biosystems

Part Number 4387776 Rev. A