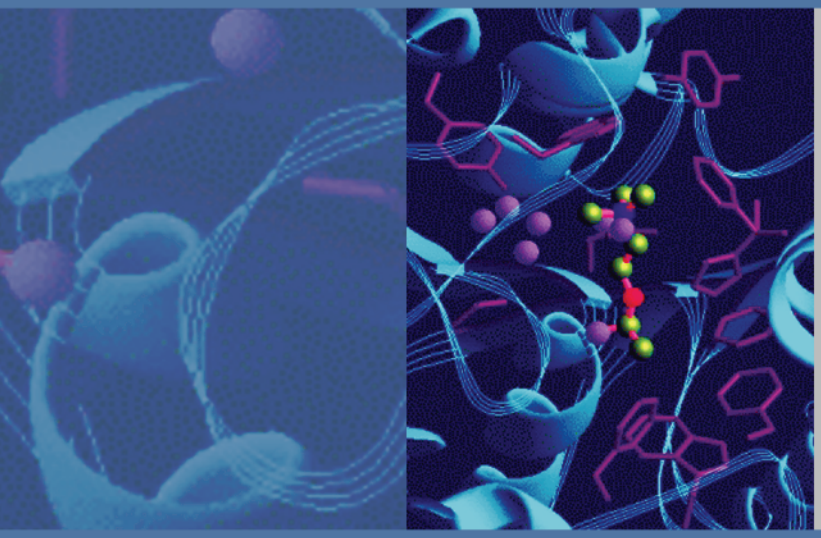

Accela

Preinstallation Requirements Guide

60057-97004 Revision C February 2009

DOCUMENTATION SURVEY

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Release history: Revision A, September 2006; Revision B, March 2008; Revision C, February 2009.

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Regulatory Compliance

Thermo Fisher Scientific performs complete testing and evaluation of its products to ensure full compliance with applicable domestic and international regulations. When the system is delivered to you, it meets all pertinent electromagnetic compatibility (EMC) and safety standards as described in the next section by product name.

Changes that you make to your system might void compliance with one or more of these EMC and safety standards. Changes to your system include replacing a part or adding components, options, or peripherals not specifically authorized and qualified by Thermo Fisher Scientific. To ensure continued compliance with EMC and safety standards, replacement parts and additional components, options, and peripherals must be ordered from Thermo Fisher Scientific or one of its authorized representatives.

Accela Pump, Accela Autosampler, and Accela PDA Detector

EMC Directive 89/336/EEC, 92/31/EEC, 93/68/EEC

EMC compliance has been evaluated by TUV Rheinland of North America, Inc.

EN 61326	1997; A1, 1998; A2, 2001; A3, 2003	EN 61000-4-4	1995; A1, 2000; A2, 2001
EN 61000-3-2	2000	EN 61000-4-5	2001
EN 61000-3-3	1995; A1, 2001	EN 61000-4-6	2003
EN 61000-4-2	2001	EN 61000-4-8	2001
EN 61000-4-3	2002	EN 61000-4-11	2001

FCC Class A, CFR 47 Part 15 Subpart B: 2005

Low Voltage Safety Compliance

Low Voltage Safety Compliance has been evaluated by TUV Rheinland of North America, Inc.

This device complies with Low Voltage Directive 73/23/EEC and harmonized standard EN 61010-1:2001, IEC 61010-1:2002, UL 61010 A-1:2004, CAN/CSA 22.2 61010-1:2004.

FCC Compliance Statement

THIS DEVICE COMPLIES WITH PART 15 OF THE FCC RULES. OPERATION IS SUBJECT TO THE FOLLOWING TWO CONDITIONS: (1) THIS DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, AND (2) THIS DEVICE MUST ACCEPT ANY INTERFERENCE RECEIVED, INCLUDING INTERFERENCE THAT MAY CAUSE UNDESIRED OPERATION.

CAUTION Read and understand the various precautionary notes, signs, and symbols contained inside this manual pertaining to the safe use and operation of this product before using the device.

Notice on Lifting and Handling of Thermo Scientific Instruments

For your safety, and in compliance with international regulations, the physical handling of this Thermo Fisher Scientific instrument ***requires a team effort*** to lift and/or move the instrument. This instrument is too heavy and/or bulky for one person alone to handle safely.

Notice on the Proper Use of Thermo Scientific Instruments

In compliance with international regulations: Use of this instrument in a manner not specified by Thermo Fisher Scientific could impair any protection provided by the instrument.

Notice on the Susceptibility to Electromagnetic Transmissions

Your instrument is designed to work in a controlled electromagnetic environment. Do not use radio frequency transmitters, such as mobile phones, in close proximity to the instrument.

For manufacturing location, see the label on the instrument.

IMPORTANT PREINSTALLATION INFORMATION... PLEASE READ

Thermo SCIENTIFIC

Accela Installation Request Form

Dear User:

Read the *Accela Preinstallation Requirements Guide*, and then print and complete the following installation request form. After all items on the form are fulfilled, sign and date the form. Then, mail or fax this form to your local Thermo Fisher Scientific sales/service office. The address and fax number for your local office are located on the following pages.

❑ 1. All laboratory remodeling has been completed.
❑ 2. Your *Accela LC system* is on site.
❑ 3. Principal operator will be available during the installation / certification period.
❑ 4. Available floor area is sufficient and flooring will support the load.
❑ 5. Sufficient bench space is available for all of the equipment. List the following:
Width: _____
Depth: _____
Height: _____
❑ 6. Workbench can support the load of the LC system [70 kg (150 lbs)] and is free from vibration.
❑ 7. Lighting is adequate.
❑ 8. Main power is installed and is in compliance with local electrical codes.
❑ 9. Power for test and cleaning equipment is installed.
❑ 10. Power outlets are of the correct configuration.
Note NEMA type: _____
❑ 11. Voltage of power outlet has been measured.
Note ***measured*** voltage: _____
❑ 12. Power is free from fluctuations due to slow changes in the average voltage or changes due to surges, sags, or transients.
❑ 13. Air conditioning is adequate for temperature, humidity, and particulate matter control. The laboratory can be maintained at a constant temperature, between 10 and 30 °C (50 and 86 °F).
❑ 14. Relative humidity is between 5% and 95% with no condensation.
❑ 15. System work area is free from magnetic disruption and electrostatic discharge.
❑ 16. HPLC grade water, methanol, acetonitrile, and isopropyl alcohol are available for testing the performance of your instrument.
❑ 17. One voice telephone line is installed near the system.
❑ 18. All relevant safety regulations are complied with.
❑ 19. Your laboratory has a waste disposal system for solvents.
❑ 20. Your laboratory has adequate ventilation.

Have any special acceptance specifications been agreed to in the contract? Yes ❑ No ❑
If **YES**, attach full details of specifications.

Is there any additional equipment that needs to be interfaced to the system? Yes ❑ No ❑
If **YES**, attach full details of additional equipment.

Note: We reserve the right to invoice against the engineer's time if the installation requirements are not met on the date of the installation.

Print your name, company name, and company address clearly below:

Name _____

Company _____ Telephone_____

Address _____

Address _____

City _____ State _____ Country_____

Signature _____ Date _____

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WEEE Compliance

This product is required to comply with the European Union's Waste Electrical & Electronic Equipment (WEEE) Directive 2002/96/EC. It is marked with the following symbol:

Thermo Fisher Scientific has contracted with one or more recycling or disposal companies in each European Union (EU) Member State, and these companies should dispose of or recycle this product. See www.thermo.com/WEEERoHS for further information on Thermo Fisher Scientific's compliance with these Directives and the recyclers in your country.

WEEE Konformität

Dieses Produkt muss die EU Waste Electrical & Electronic Equipment (WEEE) Richtlinie 2002/96/EC erfüllen. Das Produkt ist durch folgendes Symbol gekennzeichnet:

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Thermo Fisher Scientific s'est associé avec une ou plusieurs compagnies de recyclage dans chaque état membre de l'union européenne et ce produit devrait être collecté ou recyclé par celles-ci. Davantage d'informations sur la conformité de Thermo Fisher Scientific à ces directives, les recycleurs dans votre pays et les informations sur les produits Thermo Fisher Scientific qui peuvent aider la détection des substances sujettes à la directive RoHS sont disponibles sur www.thermo.com/WEEERoHS.

Contents

Preface

This *Accela Preinstallation Requirements Guide* provides you with information to plan and prepare your lab site prior to delivery and installation of your system. Please read each chapter carefully to be sure that your laboratory is ready for the installation of your system.

Related Documentation

In addition to this guide, Thermo Fisher Scientific provides the following documents for the Accela LC system:

- *Accela Getting Connected Guide*
- *Accela Getting Started with ChromQuest 5.0 Guide*
- *Accela Getting Started with Xcalibur Guide*
- *Accela Autosampler Hardware Manual*
- *Accela Pump Hardware Manual*
- *Accela PDA Detector Hardware Manual*

Safety and Special Notices

Make sure you follow the precautionary statements presented in this guide. The safety and other special notices appear in boxes.

Safety and special notices include the following:

CAUTION Highlights hazards to humans, property, or the environment. Each CAUTION notice is accompanied by an appropriate CAUTION symbol.

CAUTION Highlights potential electrical hazards to humans.

IMPORTANT Highlights information necessary to prevent damage to software, loss of data, or invalid test results; or might contain information that is critical for optimal performance of the system.

Note Highlights information of general interest.

Tip Highlights helpful information that can make a task easier.

Contacting Us

There are several ways to contact Thermo Fisher Scientific for the information you need.

❖ To contact Technical Support

Phone	800-532-4752
Fax	561-688-8736
E-mail	us.techsupport.analyze@thermofisher.com
Knowledge base	www.thermokb.com

Find software updates and utilities to download at mssupport.thermo.com.

❖ To contact Customer Service for ordering information

Phone	800-532-4752
Fax	561-688-8731
E-mail	us.customer-support.analyze@thermofisher.com
Web site	www.thermo.com/ms

❖ To copy manuals from the Internet

Go to mssupport.thermo.com and click **Customer Manuals** in the left margin of the window.

❖ To suggest changes to documentation or to Help

- Complete a brief survey about this document by clicking the link below. Thank you in advance for your help.

- Send an e-mail message to the Technical Publications Editor at techpubs-lcms@thermofisher.com.

Introduction

This guide contains information on setting up a laboratory for a standalone Accela LC system. If you are integrating an Accela LC system with a Thermo Scientific mass spectrometer, refer to the preinstallation requirements guide for the mass spectrometer.

The Accela LC system is designed to operate reliably under carefully controlled environmental conditions. As the purchaser, you are responsible for providing a suitable location, a suitable operating environment, a source of power of acceptable quality, correct solvent supplies, and proper waste systems.

Operating an Accela LC system or maintaining it in a condition outside the power and operating environment specifications described in this guide might cause failures of many types. The repair of such failures is specifically excluded from the standard warranty and service contract coverage.

This manual contains information specific to the standalone Accela LC system. The standalone system consists of an Accela Pump, Accela Autosampler, Accela PDA Detector, and solvent platform. The Accela modules are controlled from a chromatography data system. The data system hardware consists of a desktop computer, monitor, Ethernet switch, and optional printer. If you are integrating your Accela LC system with a Thermo Scientific mass spectrometer, refer to the preinstallation guide for the mass spectrometer.

For additional information, request specific preinstallation support directly through your local sales or service office for Thermo Fisher Scientific San Jose Products.

Site Preparation

Before a Thermo Fisher Scientific field service engineer can install your instrument, you must prepare the site. Review the space and load requirements provided in this chapter and ensure that the laboratory workbenches are large enough and strong enough to support the data system hardware and the LC system. To facilitate communication with a service engineer, install a telephone near the LC system workbench.

Note If you are integrating the Accela LC system with a mass spectrometer, refer to the preinstallation requirements guide for your mass spectrometer for information on its site requirements.

Contents

Shipping Containers

Table 1 lists the dimensions of the shipping containers for the components of the Accela LC system. The Accela System Kit contains an Ethernet switch, the Solvent Interconnect Kit, the system interconnect cable, Ethernet cables, and so on.

Table 1. Shipping container dimensions

Component	Height		Width		Depth	
	cm	in.	cm	in.	cm	in.
Accela Pump	59	23	53	21	36	14
Accela Autosampler with Accela AS Accessory Kit	64	25	58	23	66	26
Accela PDA Detector	59	23	53	21	36	14
Accela System Kit	51	20	41	16	33	13

Space and Load Requirements

Table 2 lists the space requirements and weights of the components of the Accela LC system.

Figure 1 shows the recommended layout for a standalone Accela LC system with an Accela PDA Detector, Accela Autosampler, Accela Pump, and solvent platform.

Note If you are integrating your Accela LC with a mass spectrometer, refer to the preinstallation installation requirements guide for your mass spectrometer for information on its space and load requirements.

Set aside a bench top in a clean, well ventilated area for the Accela LC system.

An Accela LC system requires a minimum benchtop area that is 38 cm wide by 51 cm deep [15 in. × 20 in. (*w* × *d*)]. The depth of the autosampler, which is the largest system module, is 51 cm (20 in.). Allow at least 15 cm (6 in.) of space between the back of the system and any wall or obstruction. This allowance provides access to the back-panel connectors and allows sufficient room for venting the electronic components. Allow at least 114 cm (45 in.) of vertical height for the stack with the pump, autosampler, detector, solvent platform, and standard 1-L solvent bottles. This height provision will allow sufficient access to the 1-L solvent bottles in the solvent platform. If you plan to use larger solvent containers, allow more vertical space.

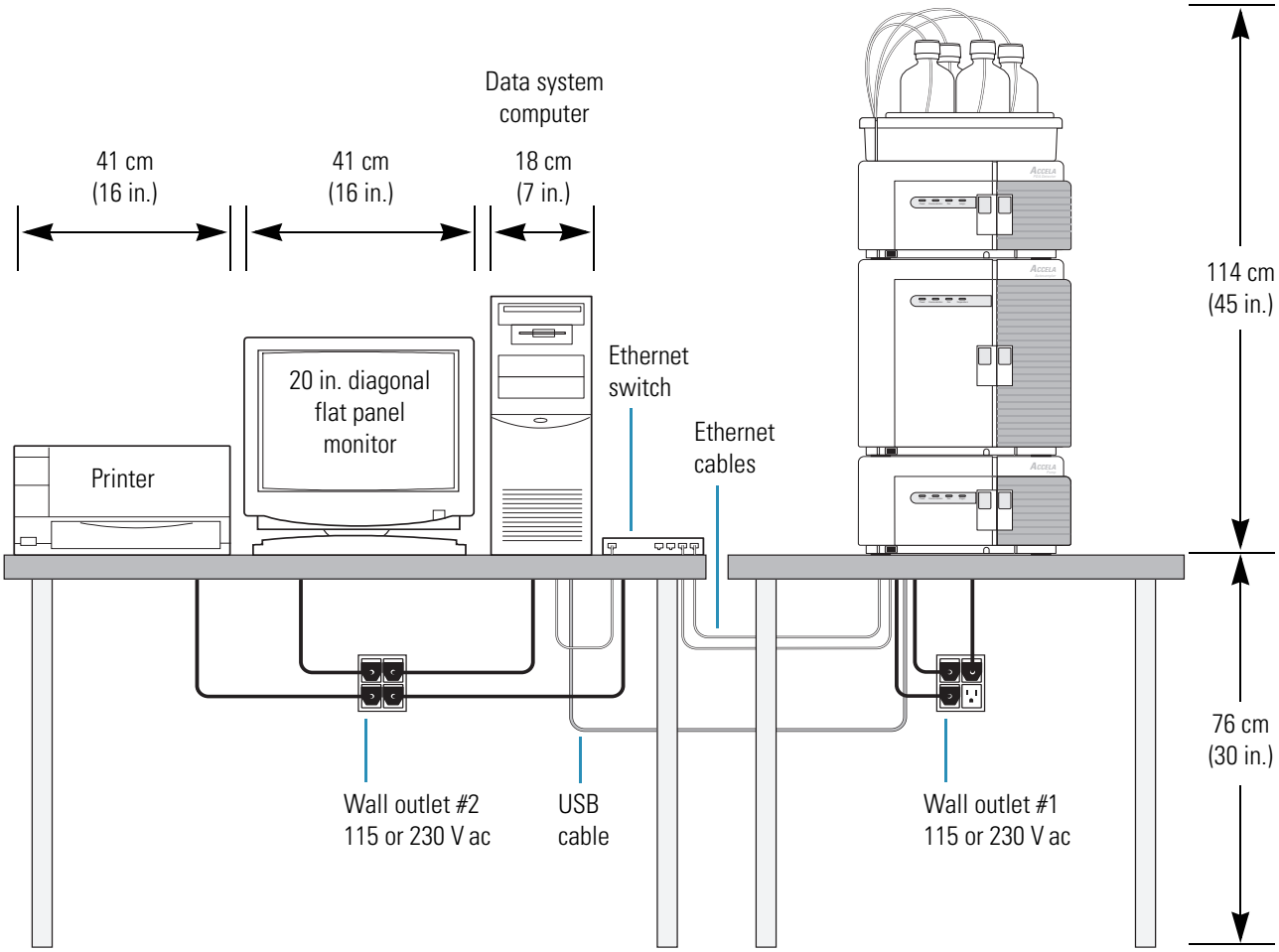
The workbench must be capable of supporting the weight of the Accela LC system, and the data system hardware, plus the weight of any options. If necessary, place the desktop computer, monitor, Ethernet switch, and printer on a separate workbench.

CAUTION For your safety and to avoid instrument damage, Thermo Fisher Scientific recommends that the load rating for the table where you place the LC system be at least twice the weight of the equipment placed on that table.

Table 2. Dimensions of the components of an Accela LC system (not including the solvent platform)

Component	Height		Width		Depth		Weight	
	cm	in.	cm	in.	cm	in.	kg	lbs
Accela Pump	18	7.2	38	15	47	18.5	18.2	40
Accela Autosampler	37	14.5	38	15	51	20	29	64
Accela PDA Detector	18	7.2	38	15	47	18.5	19.5	43
Desktop computer	48	18	18	7	41	16		
Computer monitor	41	16	41	16	15	6	4.5	10
Printer	20	8	41	16	46	18		

Figure 1. Recommended layout for a standalone Accela LC system with data system



Telephone

Install a telephone in your laboratory near the instrument so that, if necessary, you can conveniently operate the system while you are working by telephone with Technical Support for Thermo Scientific products. Place the voice telephone outlet within 2 m (6 ft.) of your system.

IMPORTANT Your instrument is designed to work in a controlled electromagnetic environment. Do not use radio frequency transmitters, such as mobile phones, in close proximity to the instrument.

Operating Environment

Attention to the operating environment will ensure continued high performance of your Accela LC system. Any expenditures for air conditioning are more than offset by good sample throughput and reduced repair costs.

You are responsible for providing the operating environment necessary for proper operation of the Accela LC system.

Contents

Temperature

The laboratory room temperature must be maintained between 10 and 30 °C (50 and 86 °F), with fluctuations of no greater than ± 5 °C.

For precision instrumentation such as the Accela PDA Detector, the temperature stability of the environment where the instrument is installed can affect performance. For the Accela PDA Detector with a LightPipe flow cell, temperature control is vital to the success of your absorbance measurements. The built-in column oven in the Accela Autosampler and the insulated PEEK™ tubing that comes with the LightPipe flow cell let you control the temperature of the mobile phase until it exits the LightPipe flow cell.

IMPORTANT As the laboratory temperature increases, system reliability decreases. All electronic components generate heat while operating. For the components to continue to operate reliably, ensure that this heat is dissipated to the surrounding air.

There must be a good flow of room air around the system, and the air conditioning system must be capable of maintaining a constant temperature in the immediate vicinity of the system.

IMPORTANT Do not place the Accela LC system under an air duct, near windows, or near heating and cooling sources.

The air conditioning load for an Accela LC system (Accela Autosampler, Accela Pump, and Accela PDA Detector) with data system is approximately 1800 Watts (6100 Btu/h). Table 3 shows the approximate heat output of each module.

Table 3. Heat output for an LC and the data system with printer

Module	Heat output (in Watts)	Heat output (in Btu/h)
Accela Autosampler	550	1880
Accela Pump	100	340
Accela PDA Detector	200	640
Flat Panel Monitor	30	100
Computer	470	1640
Laser printer	350	1230

Humidity

Maintain the relative humidity of the operating environment between 5 and 95 percent, with no condensation.

Operating an Accela LC system in an environment with very low humidity can cause static electricity to accumulate and discharge, which can shorten the life of the electronic components. Operating the system in an environment with high humidity can cause condensation, oxidation, and short circuits. It can also cause dust to accumulate, which can block filters on cooling fans.

To ensure that your laboratory is always within the required temperature and humidity specifications, Thermo Fisher Scientific recommends that you equip your laboratory with a temperature/humidity monitor.

Vibration

Keep floors free of vibration caused, for example, by nearby equipment.

Lighting

Good lighting makes any work area more enjoyable. Thermo Fisher Scientific recommends that you use a small, high-intensity lamp when cleaning the mass spectrometer components.

Particulate Matter

Ensure that the air in your laboratory is free from excessive dust, smoke, or other particulate matter in excess of 5 µm—that is, fewer than 3500000 particles per cubic meter (100000 particles per cubic foot).

Dust can clog the air filters, which causes reduced air flow around electronic components. Dust on electronic components can act as an insulating blanket, which reduces the transfer of heat from the components to the surrounding air.

Electrostatic Discharge

Electrostatic discharge (ESD) can damage the electronic components of your Accela LC system.

The discharge of static electricity is not perceptible to humans until the potential is at least 4000 V. However, a discharge of electrostatic potential as small as 50 V can damage many electronic components. While ESD damage can be catastrophic and cause your system to cease functioning, more commonly, ESD damage might cause latent problems that are detrimental to sensitive electrical components, causing premature failures.

The modules of your Accela LC system are designed to withstand electrostatic discharges up to 15 kV (air discharge) and 8 kV (contact discharge) with all panels in place. However, removing the panels and handling the PCBs without proper precautions might damage the electrical components or cause them to fail prematurely.

Static electricity can develop in a variety of ways. Some examples follow:

- Walking across a carpet in a room that is at 20 percent relative humidity can generate as much as 35000 V of electrostatic potential on the surface of your body. A similar trip in a room at 80 percent relative humidity generates about 1500 V of electrostatic potential.
- Sitting and working in a chair padded with polyurethane foam in a room at 20 percent relative humidity can cause as much as 18000 V of electrostatic potential to develop on your skin. At 80 percent relative humidity, the electrostatic potential can be as much as 1500 V.
- Working in a laboratory coat and clothing made of synthetic fibers can cause static electricity to accumulate on your skin.
- Using Styrofoam™ cups and packing materials results in a considerable electrostatic charge.

Because of ESD, Thermo Fisher Scientific recommends the following precautions, especially when operating your system at the lower end of the relative humidity specification:

- Use a static-dissipating floor covering (such as tile or conductive linoleum) in the room that houses your instrument.
- Use laboratory chairs covered with natural fibers or other static-dissipating material.
- Wear a laboratory coat and clothing made of natural fiber or other static-dissipating material when you are operating the instrument.
- Keep Styrofoam cups or packing materials away from the instrument.

Line Power

The quality of line power delivered to your system can affect its performance and longevity. To ensure that your instrument performs optimally and is not damaged by line power fluctuations, verify that your laboratory electrical supply complies with all power quality requirements.

You are responsible for providing a power source of acceptable quality to operate your system.

Contents

Quality of Power

The quality of power supplied to your Accela LC system is very important. The line voltage must be stable and within the specifications listed in this guide. The line voltage must be free of fluctuations due to slow changes in the average voltage, surges, sags, or transients.

Table 4 contains definitions for the three most common voltage disturbances.

Table 4. Common voltage disturbances

Voltage disturbance	Definition
Slow average	A gradual, long-term change in average root mean square (RMS) voltage level, with typical durations greater than 2 s
Sags and surges	Sudden changes in average RMS voltage level, with typical durations between 50 µs and 2 s
Transients or impulses	Brief voltage excursions of up to several thousand volts with durations up to 50 µs

Constant high line voltage, impulses, or surges in voltage can cause overheating and component failures. Constant low line voltage or sags in voltage can cause the system to function erratically or not at all. Transients, even a few microseconds in duration, can cause electronic devices to fail catastrophically or to degrade and eventually shorten the lifetime of your system. For these reasons, it is important that you establish the quality of the line voltage in your laboratory before installing an Accela LC system.

Power Monitoring Devices

Monitor the quality of your line power with a power line disturbance analyzer.

This type of device provides a continuous record of line performance by analyzing and printing out information on three types of voltage disturbances: slow average, sag and surge, and transient. The Dranetz™ power line disturbance analyzer is a device capable of detecting and recording most types of line power problems.[1] You can rent power line analyzers from electrical equipment suppliers.

Monitor the power line 24 hours a day, for seven consecutive days. If inspection of the printout indicates disturbances, take corrective action.

Power Conditioning Devices

You can correct a line voltage problem using various line voltage conditioning devices. If you have good regulation but the power line disturbance analyzer shows transient voltages, then an isolation/noise-suppression transformer can resolve the problem. If there are both transient and regulation problems, consider power conditioners that can control these problems.

When the line voltage is free from voltage sags, surges, and impulses but is more than 10 percent outside of the voltage specifications, a buck/boost transformer can lower (buck 10 percent) or raise (boost 10 percent) the line voltage.

Each buck/boost transformer is encased in a metal housing approximately 13 × 13 × 26 cm (5 × 5 × 10 in.) and is equipped with a 2 m (6 ft) power cable. To order the buck/boost transformer kit (P/N OPTON-01460), contact Thermo Fisher Scientific San Jose, and then have your electrician install the buck/boost transformer before a Thermo Fisher Scientific field service engineer installs your LC system. The installation instructions for the transformer are included in the kit.

CAUTION For compliance and safety, recognized domestic and international organizations (for example, UL, CSA, TÜV, and VDE) must certify your uninterruptible power supply (UPS) devices.

[1]Thermo Fisher Scientific does not endorse any power monitoring company, nor does it endorse products other than its own. Companies and products listed in this guide are given as examples only.

Available Outlets

The Accela Autosampler and the Accela Pump are equipped with autoranging power modules and can operate within the range of 100 V to 230 V, 50/60 Hz. The Accela PDA Detector can operate at nominal voltages of 100 V, 115 V, and 230 V, 50/60 Hz.

The minimum and maximum voltage tolerances are in compliance with EN60950-1:2001, as follows:

> "If the equipment is intended for direct connection to the AC mains supply, the tolerances on rated voltage shall be taken as +6% and -10% unless the rated voltage is 230 V single phase or 400 V three-phase, in which case the tolerance shall be taken as +10% and -10%."

For systems installed in regions with 115 V ac only service, the basic power requirements for an Accela LC system with computer, monitor, and printer consist of the following:

- Nominal voltage of 115 V ac and 230 V ac
- Frequency of 50/60 Hz
- Two fourplex outlets (single-phase power) with a minimum power rating of 10 A (115 V ac)
- Earth ground hard-wired to the main panel

For systems installed in areas with 230 V ac only service, the basic power requirements for a Accela LC system consist of the following:

- Nominal voltage of 230 V ac
- Frequency of 50/60 Hz
- Two fourplex outlets, with a minimum power rating of 10 A at each fourplex outlet
- Earth ground hard-wired to the main panel

IMPORTANT The Accela LC system, which includes the data system hardware, must have a common ground. The interconnected power outlets for the Accela LC system must have a common point to one ground connector. Connecting the modules of the LC system to external grounds at different potentials can create a ground loop that causes noise and interference.

CAUTION Improper grounding of the Accela LC system creates an electrical safety hazard.

Note Additional power outlets might be required for test and cleaning equipment, such as an ultrasonic bath. Thermo Fisher Scientific recommends that there be several additional power outlets close to the workbench space within your laboratory.

Figure 1 on page 5 shows the optimum location of the power outlets.

The power cables for the modules of the Accela LC system are 3 m (9 ft) and the cables from the personal computer, monitor, and printer are approximately 2 m (6 ft) long.

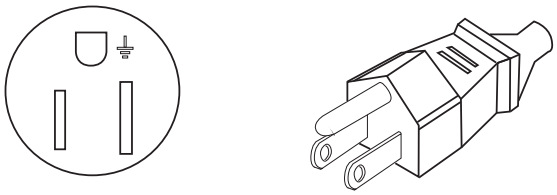
The Accela LC modules are shipped with power cords appropriate to their shipping destination (see Table 5). The printer is shipped with either a NEMA 5-15P plug or a 220 V ac European CEE 7/7 (Schuko) plug. Local codes in your area might require that you install another type of plug and receptacle. The Thermo Fisher Scientific field service engineer for your country will provide the appropriate power plugs.

Table 5. Power cords supplied according to shipping destination

Destination	Plug type	Voltage rating	Current rating	P/N
United Kingdom	BS 1363	250 V ac	5 A	6003-0810
Switzerland	SEV 1011	250 V ac	10 A	6003-0620
China and Europe	CEE 7/7	250 V ac	10 A	6003-0330
United States and Canada	NEMA 5-15P	125 V ac	10 A	6003-0160

The NEMA 5-15P plug and its corresponding receptacle are shown in Figure 2.

Figure 2. NEMA 5-15P power plug and receptacle



Receptacle Plug

Table 6 shows the maximum current required by each component of a typical Accela LC system. The components can be manually set to 115 V ac or 230 V ac or can be ordered as a 115 V ac or 230 V ac option.

IMPORTANT The values listed in Table 6 are the average currents drawn by each of the listed components. Contact your Thermo Fisher Scientific field service engineer for more information.

Table 6. Maximum current (single phase) for an LC at 115 or 230 V ac, and the data system (with printer) at 115 or 230 V ac

Module	Voltage 115 V ac Current (in amperes)	Voltage 230 V ac Current (in amperes)
Liquid chromatograph*	10	5
Monitor	2	1
Computer	4	2
Laser printer*	3	2

*Approximate. The actual value depends on your equipment.

Note For power requirements and specifications, see your mass spectrometer hardware manual.

Before you install a Accela LC system, plan your power system. See Table 7 for an example of the number of outlets that your laboratory might require.

Table 7. A sample laboratory setup*

Item	Outlets
HPLC System	
• Autosampler	1
• Pump	1
• Detector	1
Data system	
• CPU	1
• Monitor	1
• Printer	1
• Ethernet switch	1
(Optional) High intensity lamp: For help in instrument maintenance	1
(Optional) Laboratory stereoscope for inspecting fused-silica parts : Useful when performing nanoflow or microfluidic experiments	1
Total outlets required for this configuration	7 to 9

*Your setup might vary and depends upon the line voltages and current supplied.

Connecting to Wall Outlets

Take care not to exceed the wall outlet specifications. The maximum load for a 115 V ac fourplex outlet is typically 20 A, and the maximum load for a 230 V ac fourplex outlet is typically 16 A.

Table 8 and Table 9 show examples of how to balance the power load among two wall outlets without exceeding their specifications.

The specifications for the modules in your system might vary from those in this guide. The power specifications on the module always supersede those in the guide.

Table 8. Maximum current drawn from a 115 V ac fourplex outlet

Module	Outlet #1 115 V ac Maximum current drawn	Outlet #2 115 V ac Maximum current drawn
Accela Autosampler	6 A	
Accela Pump	1 A	
Accela PDA Detector	2 A	
Monitor		2 A
Computer		4 A
Laser printer		3 A

Table 9. Maximum current drawn from a 230 V ac fourplex outlet

Module	Outlet #1 230 V ac Maximum current drawn	Outlet #2 230 V ac Maximum current drawn
Accela Autosampler	3 A	
Accela Pump	0.5 A	
Accela PDA Detector	1 A	
Monitor		1 A
Computer		1 A
Laser printer		2 A

CAUTION Never connect a mass spectrometer and an Accela LC system to the same electrical wall outlet circuit.

Uninterruptible Power Supply

If your local area is susceptible to corrupted power or power disruptions, then install an uninterruptible power supply (UPS) in your laboratory.

CAUTION For compliance and safety, your uninterruptible power supply (UPS) devices must be certified by recognized domestic and international organizations (for example, UL, CSA, TÜV, and VDE).

Technical Assistance

Occasionally, you might encounter line power sources of unacceptable quality that adversely affect the operation of an Accela LC system. Correcting line power problems is your responsibility. Contact your local office for Thermo Scientific products for assistance in monitoring the line voltage in your laboratory and in selecting a line conditioner.

Specifying power conditioning equipment is a complex task that is best handled by a company or consultant specializing in that field. Contact your local Thermo Fisher Scientific office for assistance in locating a power consultant in your area.

Waste and Ventilation

You are responsible for providing the proper waste and ventilation systems that are required to operate the system.

Ineffective waste arrangements for the instrument can adversely affect the system's performance. Be sure to collect and dispose of solvent waste properly.

To provide drainage and prevent solvent from leaking into the Accela system modules, the accessory kits for the autosampler and the pump contain sections of convoluted waste tubing that you use to connect the drainage ports on the front of the Accela system modules. The Accela Pump is capable of producing flow rates up to 1.00 mL/min. Ensure that you have an appropriate waste container to collect solvent waste.

In addition to providing a proper waste collection and disposal system, you must also ensure that your laboratory is adequately ventilated to prevent the buildup of solvent fumes.

Solvents

You are responsible for providing the solvent supplies that are required to operate the system.

Your instrument requires high purity solvents. The Thermo Fisher Scientific field service engineer might also require certain solvents for the installation verification of your system.

The solvents listed in Table 10 are useful in operating and maintaining your Accela LC system. Installation of the Accela LC system requires HPLC-grade methanol and water. If you are using the Accela LC system as the inlet to a mass spectrometer, use LC/MS-grade solvents.

Table 10. Solvents

Solvents / Reagent	Specification
Isopropanol	HPLC grade or LC/MS grade
Methanol	HPLC grade or LC/MS grade
Acetonitrile	HPLC grade or LC/MS grade
Water	HPLC grade or LC/MS grade

Note Do not filter solvents. Filtering solvents can introduce contamination.

Store and handle all chemicals in accordance with standard safety procedures.

For information about LC/MS-grade solvents supplied by Fisher Scientific, go to the following Web site: www.FisherLCMS.com.

Instrument Arrival

The modules of your Accela LC system are shipped by electronic equipment carriers who specialize in the handling of delicate machinery. Occasionally, however, equipment inadvertently does get damaged in transit.

Please take the following precautions when receiving equipment:

- Check carefully for obvious damage or evidence of rough handling.
- If external damage is apparent, note this fact on all copies of the receiving documents and describe briefly the extent of the damage. The driver should sign (or initial) next to your comments to confirm your observations.
- Contact the Traffic Department, telephone [1] (408) 965-6000, at the Thermo Fisher Scientific office in San Jose, California, USA, to report the damage.

Note Freight insurance requires that obvious damage be noted on the receiving documents.

Domestic Shipments: Instruments are shipped using one of the following methods: (a) FOB (free on board) San Jose, California, USA or (b) FOB destination. The method of shipment determines who has responsibility for filing a claim against the carrier if the system is damaged in transit.

Most systems are shipped FOB San Jose, and in this instance any damage(s) incurred in shipment is the responsibility of the purchaser and the carrier. However, Thermo Fisher Scientific San Jose will assist with claims filing and (billable) repairs if necessary.

If the system is shipped FOB destination, Thermo Scientific San Jose will file a claim against the carrier. Note, however, that Thermo Fisher Scientific San Jose will not accept liability for damage if materials are received with obvious damage and the damage is not recorded on the receiving documents.

When your system arrives, move it to a protected location indoors. If you have questions about moving your system, contact your local office for Thermo Scientific San Jose products. Telephone and fax numbers for Thermo Fisher Scientific San Jose offices are listed in "Contacting Us" on page xiv and immediately following the Installation Request Form.

International Shipments: Instruments shipped outside of the USA are shipped CIP (carriage and insurance paid to) destination unless specified differently. If the system is shipped CIP destination and if any damages are incurred in shipment, Thermo Fisher Scientific San Jose

will file a claim against the carrier. Note, however, that Thermo Fisher Scientific San Jose will not accept liability for damage if materials are received with obvious damage and the damage is not recorded on the receiving documents.

Installation

Prior to installation of the Accela LC system, make sure that all preparations described in the previous chapters are complete.

After your lab site preparation is completed, the Accela LC system Installation Request Form has been mailed or faxed to your local office for Thermo Scientific San Jose products, and the system is delivered, call your Thermo Fisher Scientific office to arrange for an installation date. See the Installation Request Form at the front of this guide. Telephone and fax numbers for Thermo Fisher Scientific San Jose offices are listed in "Contacting Us" on page xiv and immediately following the Installation Request Form.

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Preinstallation Survey

Verify that your lab meets the following list of preinstallation requirements before your Accela LC system is installed. If you are installing a mass spectrometer along with the Accela LC system, see its preinstallation guide. Use the Accela LC system Installation Request Form at the front of this guide to check off each item as it is completed or verified.

1. All laboratory remodeling has been completed.
2. Available floor area is sufficient and flooring will support the load.
3. Sufficient bench space is available for all of the equipment. List the following:

   Width: _____
   Depth: _____
   Height: _____
4. Workbench can support the load of the system and is free from vibration.
5. One voice telephone line is installed near the system.
6. Air conditioning is adequate for temperature, humidity, and particulate matter control. The laboratory can be maintained at a constant temperature, between 10 and 30 °C (50 and 86 °F).
7. Relative humidity is between 5% and 95% with no condensation.
8. Lighting is adequate.
9. System work area is free from magnetic disruption and electrostatic discharge.
10. Main power is installed and is in compliance with local electrical codes.
11. Power outlets for test and cleaning equipment are available.
12. Power outlets are of the correct configuration.

    Note outlet type:_____
13. Voltage of power outlet has been measured.

    Note ***measured*** voltage: _____
14. Power is free from fluctuations due to slow changes in the average voltage or changes due to surges, sags, or transients.
15. HPLC-grade water, methanol, and acetonitrile are available for testing your instrument.
16. Your laboratory has a waste disposal system for solvents.
17. Your laboratory has adequate ventilation.
18. Your laboratory complies with all relevant safety regulations.
19. Your Accela LC system is on site.
20. The principal operator will be available during the installation/certification period.

Installation Kits

Thermo Fisher Scientific ships the following kits with Accela LC system:

- Accela Pump Accessory Kit (P/N 60157-62001), which contains parts such as fuses, fittings, tubing, tools, piston seals, frits, and cables
- Accela Autosampler Accessory Kit (P/N 60357-62001), which contains a 1 L wash bottle, vials, carrier trays, 16 mL reservoir vials, fuses, cables, test mixtures, a wrench, and so on
- Accela PDA Detector Accessory Kit (P/N 60257-62001), which contains an Ethernet cable, drainage tubing, and so on

Note You as the customer are responsible for replacing any consumables used during the installation.

The Accela System Kit (P/N 60057-60060) is not shipped with instruments purchased without the instrument control software. The Accela System Kit contains an Ethernet switch, the Solvent Interconnect Kit, the system interconnect cable, Ethernet cables, and so on. The Solvent Interconnect Kit (P/N F5050-010) contains four 1 L solvent bottles, tubing, fittings, ferrules, and marker letters. When you order an Accela LC system, make sure that your order includes the Accela System Kit.

Installation

When your new Accela LC system is on site, and it is ready for installation, a Thermo Fisher Scientific field service engineer will install it.

During the installation, the field service engineer will demonstrate the following:

- The basics of equipment operation and routine maintenance.
- The marketing specifications that are in force at the time you purchased the system.

Note To receive maximum benefit from this on-site training opportunity, the instrument's operator should be available during the entire installation.

Do not use your new system for sample analysis until the Thermo Fisher Scientific field service engineer has completed the installation and you have signed the Acceptance Form.

Preventive Maintenance

You as the user are responsible for the routine and preventive maintenance of the Accela LC system and the data system.

Regular preventive maintenance is essential. It increases the life of the system, maximizes the uptime of your system, and provides you with optimum system performance. Maintenance techniques are covered in the following manuals:

- *Accela Autosampler Hardware Manual*
- *Accela Pump Hardware Manual*
- *Accela PDA Detector Hardware Manual*
- Manuals that come with the data system computer

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