

3730xl DNA Analyzer

Publication Number 100077623 Revision A

This guide contains the information needed to prepare your site for installation of the 3730xl DNA Analyzer (Cat. No. A39079).

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 service representative will contact you to schedule the installation. When the installation date is scheduled, perform the following tasks.

Review this guide



Complete the site preparation checklist

(see page 2)



Receive and inspect the shipment

(see page 11)



Move the packaged shipment to the installation site

(see page 12)

Installation time and training

After the shipment is unpacked, the installation takes approximately 2 business days.

During and/or after installation, the service representative calibrates the instrument, performs run verification, reviews data, and provides some basic operator training. For additional training and reference information, see the user documents that are provided with the product.

If you ordered the optional <IQ/OQ/IPV or IQ/OQ> service, the service representative also performs this service during the 2-day installation.


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"/> | | | Customer responsibilities have been reviewed. | 3 |
| <input type="checkbox"/> | | | Personnel have been assigned tasks and responsibilities. | |
| <input type="checkbox"/> | | | The installation site is identified and meets the following requirements: | |
| | | | <input type="checkbox"/> Space and clearance | 4 6 |
| | | | <input type="checkbox"/> Lab bench or table | 7 |
| | | | <input type="checkbox"/> Environmental | 7 |
| | | | <input type="checkbox"/> Electrical | 8 |
| | | | <input type="checkbox"/> Network | 9 |
| | | | <input type="checkbox"/> Safety | 10 |
| <input type="checkbox"/> | | | If required, antivirus software is available for installation on the computer provided with the product. | 10 |
| <input type="checkbox"/> | | | The shipment was received and inspected as follows: | 11 |
| | | | <input type="checkbox"/> The items shown on the shipping list are the items that were ordered at the time of purchase. | |
| | | | <input type="checkbox"/> Damage to shipping containers was reported to the shipping company that delivered the shipment and to your service representative. | |
| | | | <input type="checkbox"/> Damage or mishandling was recorded on the shipping documents. | |
| | | | <input type="checkbox"/> If provided with the shipment, all reagents and plates are unpacked and stored as specified on package labels. | |
| <input type="checkbox"/> | | | The installation site is cleared and ready for the installation. | 12 |
| <input type="checkbox"/> | | | The packaged shipping containers are moved to the installation site. | |
| <input type="checkbox"/> | | | All materials for installation, qualification, and operation are available. | 11 |
| <input type="checkbox"/> | | | If provided, the <i>3730xl DNA Analyzer IT Checklist</i> (Pub. No. MAN0018044) has been completed and returned according to the instructions in the checklist. | 4 |

Customer responsibilities

| Personnel | Responsibilities and tasks to perform before the installation date |
|--|---|
| Site preparation/ installation coordinator | <ul style="list-style-type: none"> • Reviews the site preparation guide for site requirements. • Coordinates personnel and tasks. • Selects the installation site. • Reviews checklists with applicable personnel to verify that the site is properly prepared. • Reviews checklists with the service representative to verify that the site is properly prepared.^[1] • Receives and inspects the packaged shipment. • Unpacks and stores the reagents box (if provided) according to the specifications indicated in the product information sheets. • 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.^[1] |
| Laboratory safety representative | <ul style="list-style-type: none"> • Reviews the safety information. • Ensures that all customer-provided materials for installation are present at the site. • Ensures that primary users (responsible for training other users) are available for training during the installation. |
| Laboratory personnel/ primary users | <ul style="list-style-type: none"> • Reviews the safety information. • Ensures that all customer-provided materials for installation are present at the site. • Ensures that primary users (responsible for training other users) are available for training during the installation. |
| Facilities personnel | <ul style="list-style-type: none"> • Ensures that the installation requirements are met for the installation site. <ul style="list-style-type: none"> – Space at the installation site – Building clearances – Humidity and temperature – Waste collection – Electrical supply – Computer (if included with product) – Safety and installation materials • Moves the packaged shipment to the site before the installation date. • Is available to assist service representative and laboratory personnel. • If applicable, ensures that at least two people are available to help the service representative move and position the instrument. |

| Personnel | Responsibilities and tasks to perform before the installation date |
|---|---|
| Network or IT specialist (if the product will be connected to a network) | <ul style="list-style-type: none"> Ensures that active, tested local area network (LAN) connections are in place. Ensures that network hardware is compatible with an RJ45-type connector. If necessary, supplies additional cables. Is available during installation to connect the product to the network. If applicable, provides and installs a network or dedicated printer. <p> CAUTION! Do not connect the product components to the network before the service representative arrives.</p> |
| | If provided, completes and returns the <i>3730xl DNA Analyzer IT Checklist</i> (Pub. No. MAN0018044). The checklist contains return instructions. |

^[1] Required for service representative installation of the instrument.

IT checklist

If the product will be connected to a network, the Network or IT specialist must fill out and return the *3730xl DNA Analyzer IT Checklist* (Pub. No. MAN0018044) before the installation can be scheduled. The checklist contains return instructions.

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)

Allocate an area of at least 130 cm × 88 cm × 117 cm (51.5 in. × 35 in. × 47 in.) at the receiving and storage area for the crated instrument.

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

| Package | Height | Length (depth) | Width | Weight |
|-------------------------|---------------------|--------------------|--------------------|-----------------|
| Instrument | 114.8 cm (45.2 in.) | 88 cm (35 in.) | 130 cm (51.5 in.) | 230 kg (508 lb) |
| Computer ^[1] | 35.5 cm (14 in.) | 53.3 cm (21.0 in.) | 47.0 cm (18.5 in.) | 14.5 kg (32 lb) |
| Monitor | 17.8 cm (7.0 in.) | 40.6 cm (16.0 in.) | 45.7 cm (18 in.) | 6.8 kg (15 lb) |

^[1] Packaging includes the keyboard.



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)

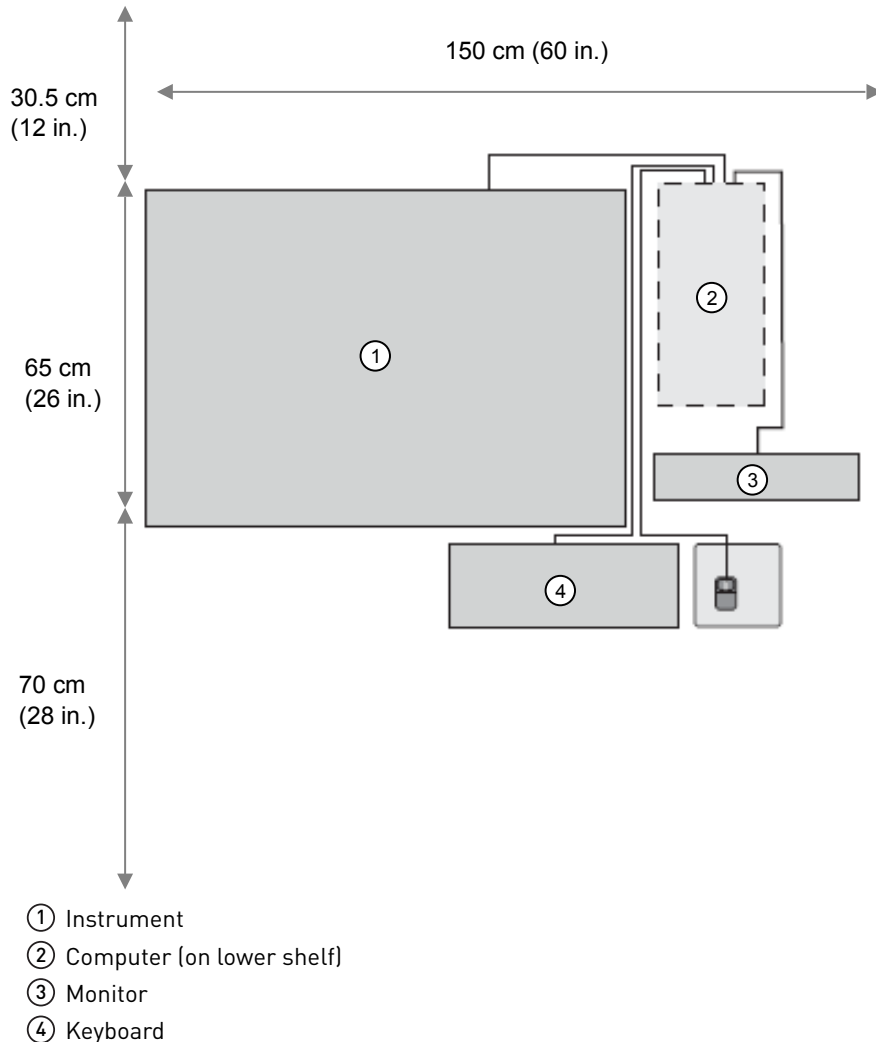
Ensure that the installation site bench space can accommodate the dimensions and support the weights of the components.

| Component | Height | Length (depth) | Width | Weight |
|----------------------|--------------------|--------------------|--|--------------------|
| Instrument | 90 cm (35.5 in.) | 65 cm (26.0 in.) | 100 cm (40.0 in.) with door closed 170 cm (67.0 in.) with door open | ~186 kg (411 lbs) |
| Computer | 36.0 cm (14.2 in.) | 41.7 cm (16.4 in.) | 17.5 cm (6.9 in.) | ~12.2 kg (27 lbs) |
| Monitor (compressed) | 36.9 cm (14.5 in.) | 18.0 cm (7.1 in.) | 40.6 cm (16.0 in.) | ~5.0 kg (11.0 lbs) |
| Keyboard | 3 cm (2 in.) | 44.5 cm (6 in.) | 14.0 cm (17.5 in.) | 1 kg (0.2 lbs) |



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.

Configured system dimensions and connections



Component clearances required for installation and maintenance

During installation and maintenance, it is necessary to access the back and sides of the product. If the back of the product faces a wall, ensure that there is sufficient clearance on the bench to rotate the product.

IMPORTANT! For safety reasons, the power outlet for the product must be accessible at all times.

| Bench | Minimum clearance |
|-------|--|
| Depth | <ul style="list-style-type: none"> • Access to all four sides of the instrument is required for servicing. • Do not block access to the rear of the instrument. • Minimum rear clearance is 30.5 cm (12 in.). • If two instruments are placed back-to-back, allow 61 cm (24 in.) of clearance between the instruments. |
| Width | >150 cm (60 in.) for the instrument, computer, and computer monitor. |

IMPORTANT! For safety, the power outlet for the instrument must be accessible.

Lab bench or table requirements

The instrument must be installed on a movable laboratory bench or table with sturdy casters. The bench must be able to accommodate the size and weight of the system. All four sides of the instrument must be accessible to the installer.

Minimum specifications:

- 121.92-cm (48-in.) width × 81.28-cm (32-in.) depth × 76.2-cm (30-in.) to 91.44-cm (36-in.) maximum adjustable height
- Lower shelf for computer installation
- 10.16-cm (4 in.) swivel/lock casters
- Supports up to 1,000 kg (2,200 lb)
- Optional:
 - 8-outlet power strip
 - Pole for mounting monitor above the table top
 - 38.1-cm (15-in.) wide pull-out work surface
 - Sit-stand keyboard tray
 - Drawer




Figure 1 Example lab bench for installation


Environmental requirements

| Condition | Requirement |
|--------------------------------|--|
| Installation site | Indoor use only |
| Altitude | Safety tested up to 2,000 m (6,562 ft) |
| 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. |
| Transient/overvoltage category | Installation categories II |
| Vibration | The instrument is not adjacent to strong vibration sources, such as a centrifuge, pump, or compressor. Excessive vibration will affect instrument performance. |
| Pollution degree | II Install the instrument 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. |
| Operating conditions | <ul style="list-style-type: none"> • 15–30°C (59–86°F) (Room temperature should not fluctuate ±2°C during an instrument run) • 20–80% relative humidity, noncondensing |

| Condition | Requirement |
|----------------------------------|---|
| Transport and storage conditions | -30 to +60°C (-22 to +140°F) Humidity: minimum 5%, maximum 95% (average in a year <80%) |
| Liquid waste collection | Dispose of the polymer, buffer, reagents and any liquid waste as hazardous waste in compliance with local and national regulations. |
| Other conditions | Ensure the room is away from any vents that could expel particulate material on the components. Avoid placing the instrument and computer adjacent to heaters, cooling ducts, or in direct sunlight. |

Electrical requirements

 **CAUTION!** Do not unpack or plug in any components until they are configured for the proper operating voltage by the service representative.


 **WARNING!** For safety, the power outlet for the instrument must be accessible at all times. 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.

- Dedicated line and ground between the instrument and the main electrical service.
- Maximum power dissipation: 600 VA (not including computer and monitor)
- Mains AC line voltage tolerances must be up to ± 10 percent of nominal voltage
- Instrument—AC 100–240 V $\pm 10\%$, 50/60 Hz, 6.7 A, power rated 600 VA
- Maximum current—6.7 A

| Device | Rated voltage | Circuit required | Rated frequency | Rated power |
|--------------------|---------------------------------------|------------------|-----------------|-------------|
| Instrument | 100–240 $\pm 10\%$ VAC ^[1] | 10 A | 50/60 Hz | 600 VA |
| Computer (desktop) | 100–240 $\pm 10\%$ VAC | 10 A | 50/60 Hz | 125 VA |
| Monitor | | | | 65 VA |

^[1] If the supplied power fluctuates beyond the rated voltage, a power line regulator may be required. High or low voltages can adversely affect the electronic components of the instrument.

Electrical protective devices We recommend several protective devices in environments with large voltage and power fluctuations.

| Recommended devices | |
|--|--|
| Power line regulator | |
| <ul style="list-style-type: none"> • 1.5-kVA power line regulator • Use 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 computer. <p>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.</p> | |
| Surge protector | |
| <ul style="list-style-type: none"> • 10-kVA surge protector (line conditioner) • Use 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. <p>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.</p> | |
| Uninterruptible power supply (UPS) | |
| <ul style="list-style-type: none"> • 1.5-kVA uninterruptible power supply (UPS) • Use in areas prone to power failure. • Power failures and other events that abruptly terminate the function of the instrument and computer can corrupt data and possibly damage the system. <p> CAUTION! PHYSICAL INJURY HAZARD. Do not attempt to lift or move the UPS unit without the assistance of at least two people. Improper lifting can cause painful and permanent back injury. See the UPS manufacturer user guide for more information.</p> <p>IMPORTANT! A UPS provides power for a limited time. It is meant to delay the effects of a power outage, not to serve as a replacement power source. In the event of a power loss, power off the instrument and computer unless you expect to regain power within the battery life of the UPS.</p> | |

Network requirements The instrument is factory-configured for IPv4 TCP/IP communication and uses an Ethernet adapter (100/1,000 Mbps) with an RJ45-type connector for local area network (LAN) connection.

If the instrument will be installed by a service representative:

- *(LAN connection only)* An active, tested network jack must be in place before the scheduled installation date.
- You must supply a standard Category-5 Ethernet cable of the required length to connect the computer to your LAN.
- The assigned IT or network specialist from your organization must be available during the installation to help connect the instrument to your network.

Antivirus software requirements

No antivirus software is provided with the Data Collection software. The following applications are compatible with the software:

- Symantec Endpoint Protection 12
- McAfee Endpoint Security version 10.5
- Windows Defender Antivirus (comes as part of the Windows™ 10 installation)

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

Ensure that the following materials are available before installation of the product:

- Safety glasses, lab coats, and chemical-resistant, disposable gloves (powder-free)
- Mobile bench to allow access to the instrument for maintenance and service
- Mini vortexer, centrifuge, and sample tubes
- Easily accessible specified power outlet
- *(Optional)* Electrical protective devices (universal power supply unit, surge protector, and/or power line regulator)
- *(Optional)* External network connection
- Freezer (-20°C)
- Refrigerator or cold-room (4°C)
- Lint-free tissues
- Glassware washing solution
- Methanol or isopropanol, HPLC-grade or better
- Water
- Three sizes of micropipettors and tips:
 - 1- to 10- μL
 - 10- to 100- μL
 - 100- to 1,000- μL

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 items that were 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 or installation kit box (boxed separately from the instrument components). Store the reagents at the temperatures specified on the product packaging or labels.

IMPORTANT! Other than reagents or plates that require storage at specific conditions, do not unpack shipping containers at this time. To protect yourself from liability for damage that occurred during shipping, inspect the shipping containers and report damage as described above.

Move the packaged shipment 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 package on end. Tipping may damage the hardware and electronics.

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



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

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Revision history: Pub. No. 100077623

| Revision | Date | Description |
|----------|-------------------|---------------|
| A | 28 September 2018 | New document. |

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