

Gemini VII 2390

Preinstallation Instructions and Checklist

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Overview

This document describes how to prepare your site for installation of the Gemini VII 2390 system. It contains instructions for both Gemini VII 2390 standard systems and Gemini VII 2390 Confirm (21 CFR11) systems.

The document is organized into four parts:

- **Part 1** contains instructions for all Gemini VII 2390 systems.
- **Part 2** contains additional instructions for Gemini VII 2390 Confirm systems only.
- **Part 3** contains a checklist to be completed for all Gemini VII 2390 systems.
- **Part 4** contains an additional checklist to be completed for Gemini VII 2390 Confirm systems only.

The *Preinstallation Instructions* contain information that will help you analyze your site and answer the questions in the checklist.

The *Preinstallation Checklist* contains questions about instrument location and your laboratory environment, equipment, and supplies. For each question, check **Yes** if the condition applies to your laboratory or **No** if it does not. When you have completed the checklist, return it to Micromeritics as described on page 9.

Conventions

This document uses the symbols shown below to identify notes of importance and cautions.



Notes contain a tip or important information pertinent to the subject matter.



Cautions contain information to help you prevent actions which could damage the instrument.



Warnings contain information to help you prevent actions which could cause personal injury.

Part 1. Gemini VII 2390 Preinstallation Instructions: All Systems

Unpacking and Inspection

When the instrument is received, unpack and inspect the contents of the shipping carton(s). Use the packing list to verify that all products, accessories, software, and documentation are received intact and in the correct quantity. The shipping carton(s) and contents should be inspected within a couple of days in the event damage or loss has occurred (see **Shipping Damage**).

Shipping Damage

If equipment is damaged or lost in transit, you are required to make note of the damage or loss on the freight bill. The freight carrier, not Micromeritics, is responsible for all damage or loss occurring during shipment. If you discover damage or loss of equipment during shipment, report the condition to the carrier immediately. Insurance claims **MUST** be made with the freight carrier, **NOT** Micromeritics.

DO:

- Keep all software, manuals, and accessories with the instrument.
- Keep all boxes and shipping cartons until the installation is complete.
- Report any shipping damage immediately to the carrier and follow their directions.
- Report missing or wrong parts to Micromeritics, in addition to any shipping damage, only after filing a claim with the Carrier.

DO NOT:

- Ask Micromeritics to file a claim for shipping damage.
- Discard shipping boxes and containers until installation is complete.

Instrument Space

An unobstructed lab work space that will accommodate the specifications below is needed for the Gemini VII 2390.

**Gemini VII Models 2390a and 2390p:**

Height: 23 in. (58 cm)
Width: 16 in. (40 cm)
Depth: 20 in. (51 cm)
Weight: 70lbs (32 kg)

Gemini VII Model 2390v

Height: 29 in. (74 cm)
Width: 16 in. (40 cm)
Depth: 20 in. (51 cm)
Weight: 74 lbs (34 kg)

Computer and Printer:

Width: Approx. 38 in. (96.5cm)

Gas Supply:

1 square foot (0.1 square meters) for each gas bottle needed for installation. For standard installation, the bottles must be within 6 feet (1.8 m) of the instrument.

Installation Configuration

Standard installation, included in the purchase of the instrument, requires the use of 1/8-in. (0.3175-cm) copper gas supply lines, which are in the instrument accessories.

A nonstandard installation will be created if another gas supply line is used or if the gas bottles cannot be placed within 6 feet (1.83 cm) of the analyzer. If Micromeritics is installing the instrument, there may be additional costs associated with a nonstandard installation. Please contact the Service Manager to discuss a nonstandard installation.

Environmental Factors

Power

The Gemini VII 2390 is designed to operate with a universal input power supply (85 to 265 VAC) at 50 or 60 Hz. Noise-free power of the correct voltage and frequency, with a safety earth ground, should be available through a standard wall receptacle. The power outlet should be able to supply 15 amps @ 100 or 110 VAC \pm 10% or 7.5 amps @ 230 VAC \pm 10%. These requirements can be checked by using a Circuit Analyzer (available at most hardware or electronic supply houses) or a multimeter. There should also be sufficient outlets for the computer, monitor, and printer and any other peripheral devices.

DO:

- Install the instrument and peripheral devices on their own, dedicated power line.

DO NOT:

- Place other devices on the same power line; for example, motors, generators, or ovens.

Temperature and Humidity

Temperature and humidity must be controlled to within the following:

Temperature: 50 to 95 °F (10 to 35 °C) operating;
0 to 122 °F (0 to 50 °C) non-operating

Humidity: 20 to 80% relative, non-condensing

DO NOT:

- Allow room temperature or humidity to exceed limits.
- Install the instrument where it is exposed to direct sunlight.
- Locate the instrument near air conditioning or heating vents.

Computer System

The computer system to be used with the Gemini VII 2390 Analyzer must meet the following *minimum* requirements:

- Computer capable of running Windows[®] XP Professional or Windows Vista[®] Business or Ultimate operating system
- 512 megabytes of main memory
- 20-gigabyte hard drive
- Ethernet port (capable of communicating with a 10 base-T ethernet card)*
- CD-ROM drive
- 1024 x 768 video display capability

*If the computer is to be connected to a network, two ethernet ports are required.

Gas Supply

Gas Bottles and Gas Supply Lines

See **Gases for Instrument Test** on page 15 for the analytical gases needed during installation. Gas bottles must be placed within 6 feet (1.8 m) of the instrument's rear or left side.

Gas lines not supplied by Micromeritics will not be installed by Micromeritics Service Personnel.

DO:

- Ensure purity of gases.
- Use the 1/8-in. (0.3175-cm) x 6-ft (1.8-m) copper gas lines supplied in the instrument accessories kit. Stainless steel gas lines are available from Micromeritics for use with gases that are not compatible with copper.



Gas supply lines that are made of materials other than copper or stainless steel may cause operational problems.

Do not, under any circumstances, use plastic polymer gas lines. Doing so may cause gas contamination and inaccurate analysis results.

DO NOT:

- Use gas bottles with less than 200 psig (1378.9 kPag) pressure.
- Use any other gas lines to connect the gas supply to the instrument.
- Use gas purifiers; they can cause operational problems.

Gas Supply Hardware

We recommend that you purchase the gas regulators to be used with the Gemini VII 2390 Analyzer from Micromeritics. The regulators Micromeritics provides have been carefully evaluated and tested to provide superior performance.



If you choose to use regulators from a source other than Micromeritics, please keep in mind that many commercially available gas regulators lack key features, which are required for gas adsorption measurements. These four vital criteria must be met:

- **Cleanliness.** Clean regulators designed specifically for high-vacuum service are required. Other regulators often contain elastomeric material or oils, which can contaminate the gas.
- **High Stability.** Excess pressure at the gas inlet ports to the instrument can interfere with accurate gas dosing and flow rates. The combined change in the outlet pressure from the gas regulator, as the gas cylinder pressure decreases or as the flow rate stops, should not change more than 5 psig (34.4 kPag) from the selected setting. When the instrument is idle for an extended period of time, such as 8 to 10 hours, this same stability of gas delivery pressures should be achieved.
- **Range of Pressure.** The regulator output must operate from 0 to 30 psig (207 kPag).
- **Suitable Subassemblies.** The regulator must have a shut-off or outlet isolation valve compatible with 1/8-in. (0.3175-cm) or 1/4-in. (0.6-cm) Swagelok® compression fittings.



If you did not purchase regulators from Micromeritics for your instrument but wish to do so, contact your local Micromeritics Sales Representative.

Regulator Expansion Kits

It is sometimes beneficial to attach more than one instrument, and/or accessory device, to a single gas supply. Any time this is done, it is critically important that there be a means of isolating, or shutting-off, each device that is attached to the gas supply regulator. Micromeritics recommends the use of a vacuum rated shut-off/isolation valve for this purpose.

This shut-off/isolation valve is required in order to prevent problems when changing gas cylinders or servicing any of the devices attached to the gas supply.

If you anticipate the need to attach more than one instrument and/or accessory device, you must acquire one or more of the following regulator expansion kits.

004/33601/00 – Regulator Expansion Kit (2-outlet, 1000 psi maximum) – This kit contains one “T fitting”, two vacuum rated shut-off valves, and other necessary hardware.

This expansion kit allows you to provide gas to two inlets.

004/33601/01 - Regulator Expansion Kit (3-outlet, 1000 psi maximum) - This kit contains one “Cross fitting”, three vacuum rated shut-off valves, and other necessary hardware.

This expansion kit allows you to provide gas to three inlets.

Laboratory Equipment and Supplies

Liquid Nitrogen

Ensure liquid nitrogen is available in sufficient quantities. There should be 3 to 10 liters as a minimum requirement for starting an analysis.

DO:

- Ensure an adequate supply of liquid nitrogen.

DO NOT:

- Use liquid nitrogen which is bluish (a sign of oxygen contamination) or not clear.

Analysis Equipment and Supplies

Since the analysis results are expressed in units of surface area per gram of sample, the true mass of the sample must be known. This requires an analytical balance with the capacity of 100 grams measurement and 1 mg readability.

In order to obtain accurate analysis results, the sample tubes must be clean. The following items are suggested for cleaning sample tubes:

- Sink
- Small plastic tub for detergent solution
- Alconox or similar laboratory detergent
- Drying oven
- Ultrasonic bath

Application Related Issues

In order to ensure a thorough installation, it will be helpful for Micromeritics to know which types of samples you will be testing. If possible, please list those types on page 15.

Please advise us if your samples require any pretreatment. If required, do you have the proper equipment, such as a vacuum oven or furnace, to pretreat your samples?

Micromeritics offers application assistance through our materials analysis laboratory (Micromeritics Analytical Services).

Gases for Instrument Test

In order to verify proper instrument, Micromeritics representatives you should analyze the reference material provided in the instrument accessories.

The gases listed below are required in order to analyze the reference materials.

(CGA 580) N ₂	99.999%
(CGA 580) He	99.999%.

Please indicate on page 15 of the Checklist which gases you intend to provide during installation.

Micromeritics Installed Instruments Only

Hazards & Precautions

Inform Micromeritics of any on-site conditions that may present hazards to Micromeritics' employees or equipment. Advise Micromeritics of any precautions that need to be taken.

Part 2. Preinstallation Instructions: Gemini VII 2390 Confirm (21 CFR11) Systems Only

This section applies only if you are installing a Gemini VII 2390 Confirm Analysis System.

Personnel Requirements

The Gemini VII 2390 Confirm Analysis System is comprised of:

- The Gemini VII 2390 and accessories
- The Gemini VII 2390 Confirm system analysis and administrator utility software

The Administrator Utility software works in conjunction with Windows security to control access to the Micromeritics application. Windows security controls computer, directory, and file access. The Administrator Utility controls access to the Micromeritics application, and controls users' rights to perform tasks within the application.

If the Gemini VII 2390 computer will be connected to a Local Area Network, your Network/Windows administrator must be available to install the network connection. Also, if the Gemini VII 2390 files need to be accessible to a laboratory information system, file location will need to be discussed during installation.

The following table lists the functions and related capabilities necessary for a successful Gemini VII 2390 system installation. The laboratory personnel responsible for each of these functions must be on-site and available during installation. After reviewing this table, complete the Personnel Requirements Checklist on page 18.

Function	Required Capability
Windows Administration	<p>Ability to create and manage Windows user groups.</p> <p>Ability to create and manage Windows users.</p> <p>Must have Windows Administrator access.</p> <p>Must be available the first and last day of installation.</p>
Network Administration	<p>Ability to connect computer to network.</p> <p>Ability to correct network connection problems.</p> <p>Ability to set necessary network drive and directory access.</p>
Micromeritics Application Administration	<p>Must have Windows Administrator access to all directories.</p> <p>Must have basic understanding of Windows Groups and Windows Users.</p>

The following table lists the procedures performed during installation and the personnel responsible for each procedure.

Step	Description	Installer	Network/ Windows Administrator	Micromeritics Application Administrator
1	Install computer on network (if necessary)		✓	
2	Install Micromeritics application	✓	✓	
3	Discuss file location	✓	✓	
4	Test setup	✓	✓	
5	Run the Administrator Utility			✓
6	Define password configuration in Administrator Utility			✓
7	Define user profiles in Administrator Utility			✓
8	Start Micromeritics application	✓		

User Information Requirements

When the Micromeritics software is installed, the software creates four Windows user groups:

- **CfrAdministrator:** contains the profile for the application **Administrator**.
- **MicDevelopers:** for users who will be assigned the **Developer** profile in the Administrator Utility. The Developer profile enables users to develop and enter analysis methods. A Developer has access to all functions of the Micromeritics application.
- **MicAnalysts:** for users who will be assigned the **Analyst** profile in the Administrator Utility. The Analyst profile enables users to perform analyses using predefined analysis methods. An Analyst has access to a limited set of the Micromeritics application features.
- **MicService:** for Micromeritics Service Personnel. These users will be assigned the **Developer** profile in the Administrator Utility and have full access to the functions of the Micromeritics application. Although Service Personnel have the same access rights as Developers, a separate user group is created for them because Service Personnel have different directory and file access permissions.

In addition to the profiles described above, a Developer can also be assigned an Administrator privilege. The Administrator privilege enables the user to establish and control user profiles.

Function	Developer	Analyst
Create sample records from templates	✓	✓
Analyze samples	✓	✓
Generate reports	✓	✓
List and print sample records and templates	✓	✓
Perform routine maintenance	✓	✓
Enable manual control when the instrument is idle	✓	✓
Change limited analysis conditions before performing an analysis	✓	✓
Change report options after an analysis	✓	✓
Create analysis methods (templates) for analyst use	✓	
Perform all other Micromeritics application functions	✓	

Part 3. Gemini VII 2390 Preinstallation Checklist: All Systems

Unpacking and Inspection

Unpacking and Inspection	Yes	No
Have the shipping cartons been unpacked and their contents inspected?	—	—
Was there any shipping damage? If Yes , has a claim been filed with the freight carrier?	— —	— —
Were all items listed on the packing list received? If No , has Micromeritics been notified?	— —	— —

Instrument Space

Instrument Space	Yes	No
Can the lab area where the instrument and computer will be placed accommodate the combined dimensions of the instrument, accessories, computer and printer?	—	—

Installation Configuration

Instrument Location	Yes	No
Will 1/8-in. (0.375-cm) copper gas supply lines (standard installation; supplied with the instrument) be used?	—	—
Will gas supply bottles be available within 6 feet (1.83 m) of the left side of the instrument (standard installation)?	—	—

Environmental Factors

Environmental Factor	Yes	No
Is power available with the correct voltage and frequency, and a safety earth ground?	—	—
Are temperature and humidity controlled within specifications?	—	—
Are hazards present or precautions necessary in area of installation? If Yes , please explain _____ _____	—	—
Are safety measures required? If Yes , please explain _____ _____	—	—

Computer System

Instrument and Accessories	Yes	No
Was the computer purchased from Micromeritics? If NO , does the computer meet Micromeritics' minimum requirements?	— —	— —

Gas Supply

Item	Yes	No
Are gas cylinders located within 6 feet (1.83 m) of the area where the instrument will be installed?	—	—
Were gas regulators purchased from Micromeritics? If NO , do your gas regulators meet Micromeritics' specifications?	— —	— —
Have you considered purchasing one or more Regulator Expansion Kits?	—	—

Laboratory Equipment and Supplies

Item	Yes	No
Are sufficient quantities of liquid nitrogen available?	—	—
Is isopropyl alcohol available in sufficient quantities?	—	—
Is an analytical balance with the capacity of 100 grams measurement and 1 gram readability available?	—	—

Application Related Issues

Application Issue	Yes	No
What types of samples will you be testing? _____ _____ _____		
Will these samples require pretreatment?	—	—
Is a vacuum oven available to pretreat samples?	—	—
Will you require any application assistance from Micromeritics Analytical Services?	—	—

Gases for Instrument Test

Required Gases	Yes	No
These gases are required. The installation will not be scheduled until these gases are available:		
(CGA 580) N ₂ 99.999%	—	—
(CGA 580) He 99.999%	—	—

Micromeritics Installed Instruments Only

Hazards and Precautions

Hazards and Precautions	Yes	No
Are hazards present or precautions necessary in area of installation? If Yes , please explain _____ _____ _____	—	—

Safety Measures

Safety Measures	Yes	No
Are safety measures required? If Yes , please explain _____ _____ _____	—	—

Personnel Security Clearance

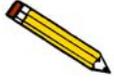
Security Clearance	Yes	No
Are there any special arrangements required concerning security clearance? If Yes , please explain in detail _____ _____ _____ _____	—	—

Projected Installation Date

When would installation be most convenient?
 (This is not a commitment for a specific installation date.)

Date: ____ / ____ / ____

Commitment Statement/Signature



For Confirm systems only: complete Part 4, beginning on the next page, before signing this commitment statement.

I have read this document and understand my responsibilities regarding preparations for the installation of our instrumentation. I believe this site is ready for the Gemini VII 2390 Analyzer to be installed.

SIGNATURE: _____

NAME (Printed): _____

TITLE (Printed): _____

COMPANY: _____

CITY, STATE and ZIP: _____

PHONE NUMBER: _____

FAX NUMBER: _____

E-MAIL: _____

DATE: _____

INSTRUMENT MODEL _____ SERIAL NUMBER _____

Part 4. Preinstallation Checklist: Gemini VII 2390 Confirm (21 CFR11) Systems Only

Complete this checklist only if you are installing an Gemini VII 2390 Confirm Analysis System.

Personnel Requirements

In order to install and operate the Gemini VII 2390 Confirm Analysis System, the laboratory personnel responsible for the functions listed below must be identified and available during the installation process.

If the instrument is to be installed by Micromeritics, please provide the names of the persons who will be responsible for these functions during installation and operation of the instrument.

Function	Person Responsible	Yes	No
Windows Administration	_____		
Does the Windows administrator have the ability to create and manage Windows user groups?		—	—
Does the administrator have the ability to create and manage Windows users?		—	—
Does the administrator have Windows Administrator access?		—	—
Will the Windows administrator be available the first and last day of installation?		—	—
Network Administration	_____		
Will the Gemini VII 2390 computer be connected to a Local Area Network (LAN)?		—	—
If yes:			
Does the network administrator have the ability to connect the computer to the network?		—	—
Does the administrator have the ability to correct network connection problems?		—	—
Does the administrator have the ability to set necessary network drive and directory access?		—	—

Function	Person Responsible	Yes	No
Will Gemini VII 2390 files need to be accessible to a laboratory information application?		—	—
If yes: Does the application administrator have the necessary file permissions?		—	—
Will the administrator be available during installation?		—	—
Micromeritics Application Administration			
Does the administrator have access to all directories?		—	—
Does the administrator have a basic understanding of Windows Groups and Windows Users?		—	—
Will the administrator be available during installation?		—	—

User Information Requirements

Function	Yes	No
Have the Gemini VII 2390 application users been entered in the Administrator Utility User Profiles Worksheet (located on the following page)?	—	—

Administrator Utility User Profiles Worksheet

***User Name** is the person's Windows User ID.

****Service** users should be added to the MicService Windows user group and assigned a **Developer** user profile in the Administrator Utility.

Application User	Developer	Analyst	Service**
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			

***User Name** is the person's Windows User ID.

****Service** users should be added to the MicService Windows user group and assigned a **Developer** user profile in the Administrator Utility.

Application User	Developer	Analyst	Service**
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
User Name* _____ Full Name _____			
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