

Nicolet iS5 LS FT-IR Analyzer - Quick Start Guide

This guide demonstrates how to install the Thermo Scientific™ Nicolet™ iS™5 LS Fourier transform infrared (FT-IR) analyzer and gives an overview of common tasks that can be performed with it.

Note Have all system utilities installed and tested before you proceed. For more information, refer to the *Site and Safety Information* guide that came with the analyzer.

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Installing the System

WAIT 24 HOURS before you open the shipping bag!

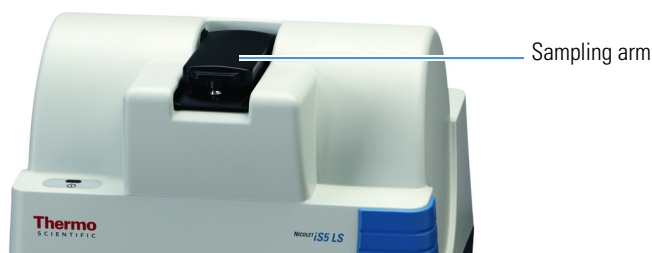
To prevent condensation which can damage internal optics, leave the analyzer in its plastic shipping bag for 24 hours after delivery to allow it to slowly adjust to room temperature. Save the packing materials for storing or transporting the instrument.

❖ To install the Nicolet iS5 LS analyzer


1. Unpack the shipping box (follow the steps below).
 - a. Remove top tray.
 - b. Lift shipping sleeve straight up and then spread hands to separate foam blocks.



- c. Remove analyzer from sleeve (use two hands; analyzer weighs 12 kg (27 lbs)).
- d. Wait 24 hours and then remove analyzer from plastic shipping bag.
- e. Remove packing tape from instrument cover.
- f. Lift analyzer sampling arm and remove protective material. Gently lower arm.

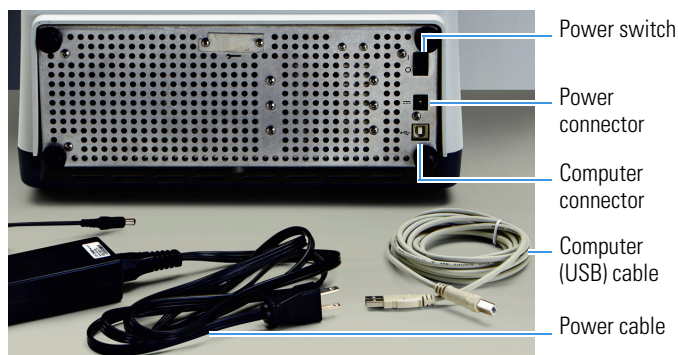


- g. Verify order is complete (compare against packing list).

2. Set up the computer.
 3. If necessary, install the software and device driver from the software media. (If the computer was purchased with the instrument, the software and driver are already installed.)
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4. Set up the analyzer and verify the device (follow the steps below).

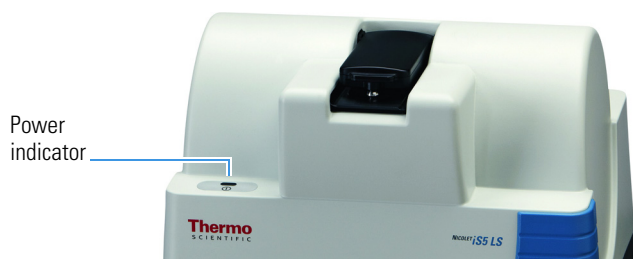


CAUTION Before you connect the power cord to the analyzer, check the *Site and Safety Information* guide in the documentation set for electrical and other system requirements.



- a. Connect power supply to Power port on analyzer back panel and to a properly grounded AC power source.

- b. Press power switch on analyzer back panel and wait until power indicator stops flashing (about 2 minutes).



- c. Connect provided USB cable to Computer connector on analyzer back panel and to USB 2.0 port on computer (typically on back panel).
“Found device” message should appear. (If message does not appear, restart computer.)

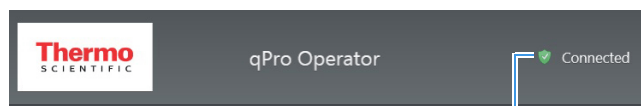
5. Start the qPro Operator software.

- a. Double-click qPro Operator icon on computer desktop.



qPro Operator

The qPro Operator main window appears. A green check mark in the status indicator verifies the instrument is ready.



Status indicator

6. Run the instrument performance tests (see below).
7. If the instrument passes both performance tests, install your workflow package(s). For more information, see “[Installing a Workflow Package](#).”

Instrument Performance Tests

After you connect and power up the instrument, wait 4 to 6 hours for the instrument to warm up and then run the instrument performance tests. The performance tests start by verifying that the sample windows are clean. See “[Cleaning the Sample Windows](#)” in this document for detailed instructions.

Two instrument performance test workflows are provided:

- **Daily Performance Test**, makes several measurements to verify instrument operation. No special materials are required.
- **Calibration Check**, uses hexadecane to verify wavelength accuracy and sample pathlength.

These materials are required for the Calibration Check:

- Small volume of 99% hexadecane (included with the system)
- Small, clean dropper bottle or pipette
- Clean, dry, lint-free laboratory wipe (unscented and lotion-free)
- Powder-free nitrile rubber gloves



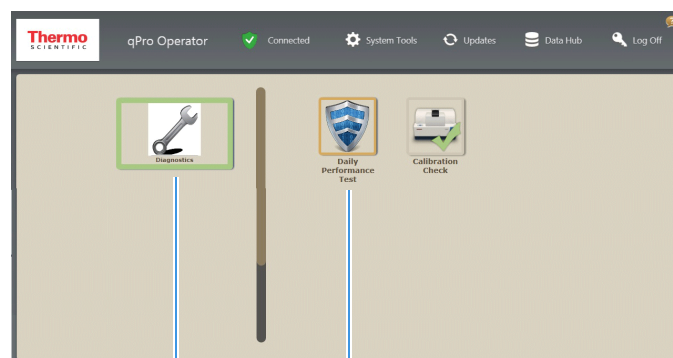
CAUTION Avoid chemical exposure. Hexadecane is a chemical irritant. Avoid contact with skin and eyes. Avoid inhaling vapor or mist. Wear gloves that provide adequate protection when handling hexadecane.

Note

- Use only 99% or higher grade hexadecane for the Calibration Check.
- Hexadecane solidifies below 18 °C (64 °F). Let it warm to room temperature (or apply gentle heat) to liquefy before use with the analyzer.
- Do not sample hexadecane directly from its original container. Pour into a clean, labeled container.

❖ To run the Daily Performance Test



1. From the qPro Operator main window, click the **Diagnostics** category and then click the **Daily Performance Test** workflow.



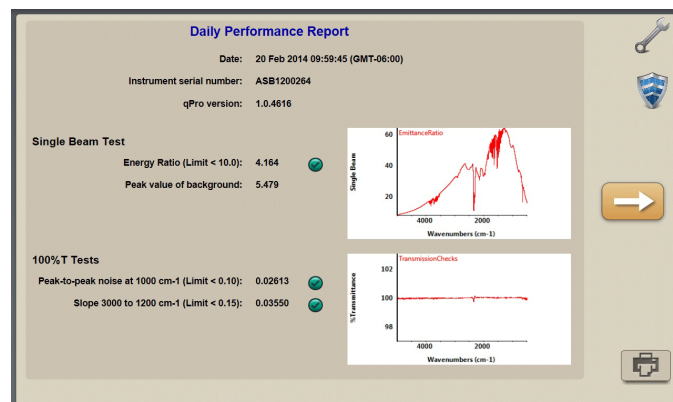
Diagnostics category


Daily Performance Test workflow

The workflow shows its historical results.

2. Make sure the sampling arm is closed and click .
3. Select **Run a new performance test** and click  to start the workflow.

When the workflow is completed, the performance test report is displayed. If the instrument passed, a green check mark appears to the right of each result and the operator can proceed. Here is an example.

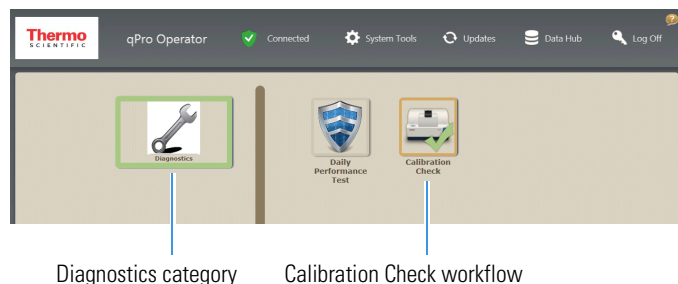


4. If your instrument passed the performance test, click  to complete the workflow and then run the Calibration Check.


If your report includes a red “X,” rerun the Daily Performance Test workflow. If it fails again, use the information at the end of this document to contact us.

❖ To run the Calibration Check

1. Click the **Diagnostics** category and then click the **Calibration Check** workflow.




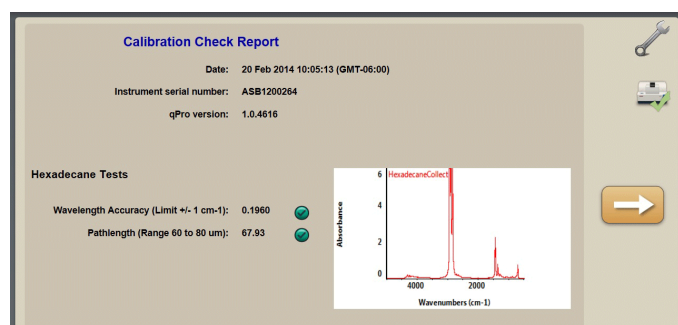
The workflow shows its historical results.


2. Make sure the sampling arm is closed and click .
3. When the workflow asks you to load hexadecane, lift the sampling arm and add hexadecane to the sample cup.

Tip

- Fill sample cup with hexadecane (typically 2 drops). **Do not overfill the cup.**
- Wait a few seconds for the hexadecane in the sample cup to settle before proceeding with the workflow.

4. Gently close the sampling arm and click  to continue.
- Do not touch the sampling arm until the workflow is completed. When the workflow is completed, the report is displayed. If the instrument passed, a green check mark appears to the right of each test result and the operator can proceed. Here is an example.



5. Click  to complete the workflow.

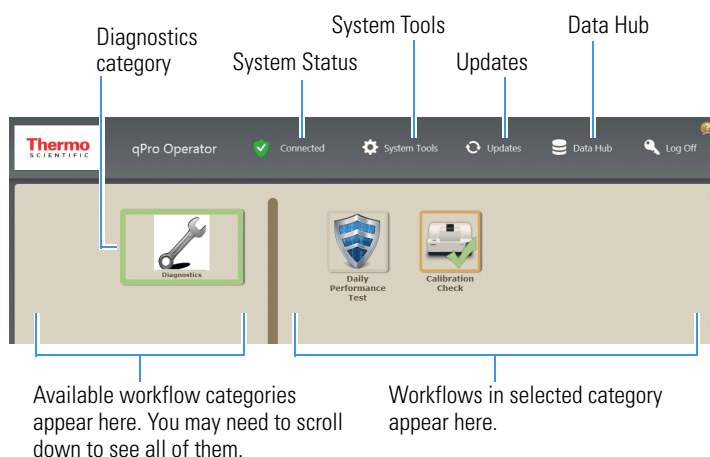
6. If your instrument passed both performance tests, install your workflow package(s). For more information, see [“Installing a Workflow Package”](#) in this document.

If your calibration check report includes a red “X,” rerun the Calibration Check workflow. If it fails again, use the information at the end of this document to contact us.

About qPro Operator Software

Use qPro Operator software to operate the analyzer. The main window provides features for installing and running customized *workflows* to operate the instrument and instrument diagnostics. The software also allows password protected access to *System Tools*, *Updates* and *Data Hub*. *System Status* reports the status of the instrument (connected, disconnected or any issues).

Figure 1. qPro Operator main window



To install customized workflows, see [“Installing a Workflow Package”](#) in this document.

Safety and Operating Precautions



WARNING Prevent fire and explosion. If using volatile solvents, provide an active venting system that is free of spark and other ignition sources and prevents flammable vapors from collecting in the atmosphere surrounding the instrument.

To prolong the life of your analyzer, follow these precautions:

- Do not use chlorinated solvents or materials that may produce HCl or HF vapors with or near the analyzer.
- Do not place containers of liquids on top of the analyzer.
- Do not block the vents at the back of the analyzer.
- Do not leave solvent on the sample windows for longer than 2 minutes.

NOTICE Read the safety guide that came with this instrument before operating the instrument.

Sampling Tips

For optimal sampling with the analyzer, follow these guidelines:

- Leave the analyzer powered on continuously with the arm closed.
- A background measurement is required at predefined intervals during continuous use. The workflows display a message when a background is needed. We recommend that the time between background collections does not exceed 2 hours.

- To apply a sample for measurement, use a dropper bottle or micropipette to fill the sample cup about two thirds full. (Do not overfill the cup.) Gently close the sampling arm and wait a few seconds for the sample to settle. Do not touch the sampling arm until the measurement has completed.

Cleaning the Sample Windows

Make sure the sample windows are clean before taking reference and sample measurement with the analyzer, and especially before you run the Daily Performance Test or Calibration Check. Materials required:

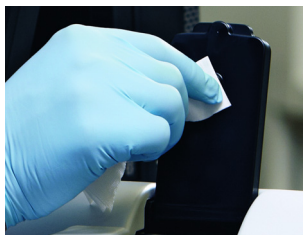
- Small volume of isooctane or other appropriate solvent
- Small, clean dropper bottle or pipette
- Clean, dry, lint-free laboratory wipes (unscented and lotion-free)
- Powder-free nitrile rubber gloves



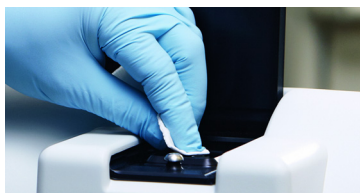
CAUTION Avoid chemical exposure. Isooctane is a chemical irritant. Avoid contact with skin and eyes. Avoid inhaling vapor or mist. Wear gloves that provide adequate protection when handling isooctane.

❖ To clean the sample windows

- Raise the sampling arm.
- Use a clean dry lint-free laboratory wipe to clean the upper sample window and surrounding area.



- Use a clean wipe to blot most of the liquid from the sample cup and the area around it.



- Fill the sample cup with cleaning solvent and wait 3 seconds for the solvent to mix with any remaining sample.



- Use a clean wipe to clean the sample cup and lower window.
- Place a few drops of cleaning solvent onto a clean wipe and use it to thoroughly clean both windows and the area around them.
- Gently lower the sampling arm.

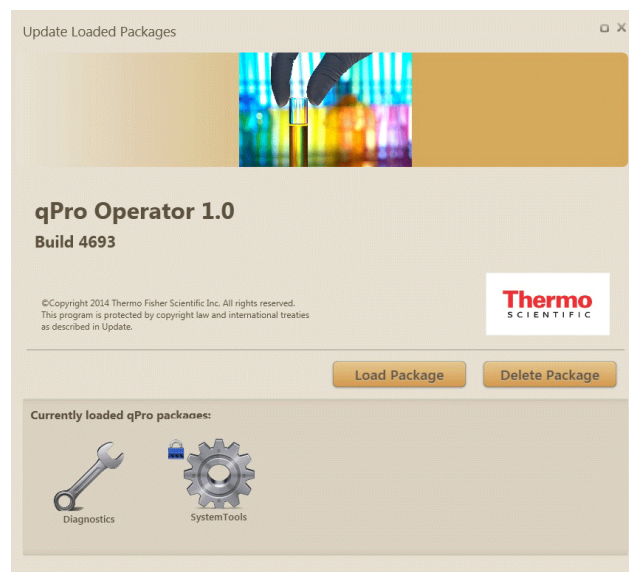
Installing a Workflow Package

Use **Updates** from the qPro Operator main window to load a new workflow package from a server or portable media. Workflow packages can contain any number of workflows and have an *.rdep filename extension.

❖ To install a workflow package

- From the qPro Operator main window, click **Updates**, enter your site's administrative password and click **OK**.

The software opens the Updates window.



- Click **Load Package** and find the media and folder that contains your package (*.rdep) file.
- Select the file and click **Open**.

The new package appears in the list of currently loaded qPro packages at the bottom of the Updates window.

- Click **Close** to close the Updates window.

The contents of the new package are added to the qPro Operator main window (categories appear in the left pane; workflows in the selected category appear in the right pane).

Contacting Us

For U.S. Technical Support, please contact:

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