

Replace the Sample Compartment Windows

The Thermo Scientific™ Nicolet™ Summit FTIR Spectrometer has windows on both sides of the sample compartment that seal the instrument from moisture and other contaminants but allow the infrared beam to enter and exit the sample compartment. The windows should always be installed, even if your system is purged with dry air or nitrogen.



WARNING Prevent fire and explosion. The infrared source inside the instrument is an ignition source. If you are using volatile solvents, provide a fume hood or other active venting system that is free of spark and other ignition sources and prevents flammable vapors from collecting in the atmosphere surrounding the instrument.

We install potassium bromide (KBr) windows at the factory and run all of our operating and performance tests with the windows installed. The KBr windows are hygroscopic but have a protective coating. On this spectrometer, they provide a working spectral range between 8,000 and 350 cm^{-1} with no significant optical absorptions lines.

If you purchased your spectrometer with zinc selenide (ZnSe) windows, the spectrometer is delivered with KBr windows installed. You must install the ZnSe windows yourself using the instructions below. ZnSe windows are non-hygroscopic, which makes them more suitable for extremely humid environments when the spectrometer is not purged. They have an anti-reflection coating to optimize performance and, on this spectrometer, provide a working spectral range between 7,800 and 500 cm^{-1} .

For optimal spectrometer performance, the sample compartment windows must be clear (not cloudy) and clean (no dust or fingerprints). If your windows become contaminated, the spectrometer may fail performance and qualification tests. You can order new windows from us and install them yourself using the instructions below.

NOTICE

- Replace sample compartment windows only with replacement parts supplied by us.
- Do not allow liquids to come into contact with the windows.
- Windows can be scratched and ruined very easily. Do not touch or attempt to clean them. Dust will not affect the signal, but fingerprints can degrade the performance of the instrument and permanently damage mirrors or windows. If you wish to remove dust from a mirror or window, blow it off with a gentle stream of clean, dry air or nitrogen. (Do not use compressed air from a can; contaminants may cause damage.)
- Leave new windows in their protective packaging until you are ready to insert them in the spectrometer.
- If you remove working KBr or ZnSe windows from the spectrometer, immediately place them in the provided protective packaging (includes desiccant) and seal the package securely.
- KBr windows are clear; ZnSe windows are yellow.

Time needed: 10 minutes

Tools needed:

- Nicolet Summit ZnSe (or KBr) replacement windows kit

The kit includes the following items:

- ZnSe (or KBr) replacement windows (2)
- Window replacement tool
- Protective packaging (includes desiccant) for storing unused windows
- Nitrile gloves



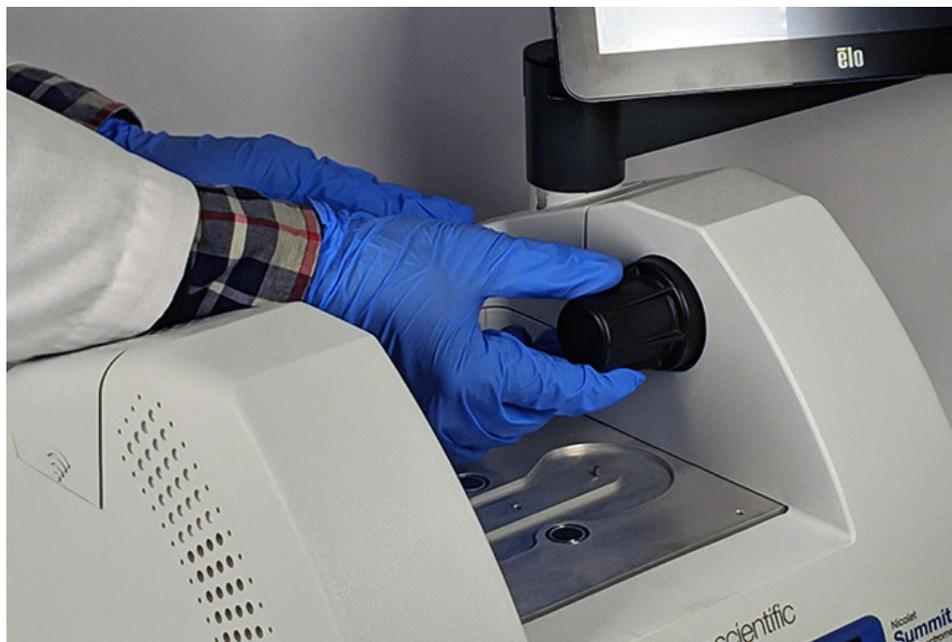
* Note the yellow color above; these are ZnSe windows

❖ To replace sample compartment windows

1. Turn off the spectrometer power switch.

Note If your instrument is purged, leave the purge on while you replace the windows to prevent ambient air from entering the spectrometer.

2. Remove any sampling accessory from the spectrometer.
3. Remove the first installed window.
 - a. Line up the three ribs on the window replacement tool's inside rim with the notches in the outside rim of the first installed window.



Note The window fittings are tight. Use one hand to stabilize the instrument and the other to remove the window.

- b. Press firmly on the tool and turn it counterclockwise to loosen the window.

Continue loosening the window until it is free. If you tip the tool upward, it will support the window so you don't have to handle it directly.



NOTICE Use nitrile gloves to handle the window and handle it by the rims only. (Avoid touching the window surfaces even when wearing gloves.)

- c. If the window is still usable, grasp it by the plastic ring and carefully place it in the provided package (with desiccant). Store the package someplace that is clean and dry.
4. Install the new window.
 - a. Grasp the new window by the plastic ring and carefully place it in the window replacement tool with the window threads facing up.
 - b. Rotate the window until the three notches in its outside rim line up with the ribs on the tool's inside rim.
 - c. Reversing the removal procedure above, tip the tool and window just enough to place the window over the opening in the spectrometer.
 - d. While maintaining light pressure against the spectrometer wall, slowly turn the tool clockwise to ensure the window's threads are engaged properly.

NOTICE The window should turn easily at the start; if it doesn't, reverse the direction of rotation and restart the insertion to avoid stripping the threads.

- e. Continue rotating the tool clockwise until you feel the O-ring compress, plus 1/8 turn more.

5. Repeat steps 3 through 4 above to replace the second window.
6. Turn on the instrument power and start OMNIC Paradigm software.
7. Wait at least 15 minutes for the spectrometer to warm up (one to six hours for best results).
8. Run the performance verification (PV) workflow for the spectrometer.
This workflow, named “Nicolet FTIR-PV Test,” is provided with the software.
9. If you use operational qualification (OQ) tests to track instrument performance, we recommend that you rerun your chosen OQ test after the sample compartment windows have been replaced (especially if you changed the window type). See the article titled [“Qualify the Summit Spectrometer”](#) in the online help for more information.
10. Replace any accessories you removed earlier on the spectrometer.

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