Changing the Detectors:

The detectors that we have and their ranges are shown below.

Detector	Range cm^{-1} (nm)	Sensitivity
MCT	10,000 - 420 (1×10^3 - 2×10^4)	D* > 5 x 10^9 cm Hz$^{1/2}$ W^{-1}
DTGS	10,000 - 370 (1×10^3 - 3×10^4)	D* > 2 x 10^8 cm Hz$^{1/2}$ W^{-1}
Si diode	25,000 - 9,500 (400 - 1×10^4)	NEP < 10^{-14} W Hz$^{-1/2}$

1) Turn off the power to the Nicolet FTIR (switch on power supply brick).
2) Open the top of the Nicolet, by first loosening three screws on the bottom front of instrument, and prop open.
3) Use a screwdriver to loosen the detector you want to remove.
4) Put the new detector into the place of the removed detector and press down on the base to make sure the electrical plug makes contact.
5) Screw down the base of the detector.
6) Close the top of the Nicolet
7) Turn on the Nicolet.
8) Check that Omnic see's the new detector.

Changing Beamsplitter

The beamsplitters have the ranges shown at right.

1) Unlock and open the beamsplitter door (top right-hand side).
2) Rotate the locking handle counter clockwise 180º on the beamsplitter holder.

Beamsplitter	Range cm^{-1} (nm)
KBr	7,800 - 370 (1.3×10^3 - 3×10^4)
Quartz	28,000 - 4,000 ($350 - 2.5\times10^3$)

3) Remove the beamsplitter in the instrument and place it in the storage area.
4) Remove the other beamsplitter from the storage area place it into the instrument.
5) Make sure that the beamsplitter is seated in position and rotate locking handle clockwise 180º.
6) The label on the handle on the beamsplitter should face forward.
7) Close and lock beamsplitter door.
8) Start the Omnic software and go to experiment setup.
9) Go to bench and make sure the correct beamsplitter, detector, and light source are chosen.
10) Go to diagnostics in the experimental setup screen.
11) If you are working in the NIR or vis see instructions on web for NIR or vis.
12) Make sure you see the interferogram (if you do not try to reduce or open the apperature to see if the interferogram appears also check the settings of the beamsplitter, source and detector) .
13) If you can not see an interferogram see below.
14) After you see the interferogram Press align.
15) When alignment completes you are ready.

Notes for Using the UV or Visible regions:

If using the NIR or visible regions (Quartz beamsplitter, Si detector, White light).

Range	Wavenumbers cm^{-1}, (λ, nm)	Beamsplitter,source, detector	Filter
Mid IR	7,800 - 370	KBr, IR, GTDS or MCT	None
Near IR	15,750-9,000 (1,100 – 635)	Quartz, White light, Si	Red
visible	24,000-15,850 (632-400)	Quartz, White light, Si	Blue

1) If you use the visible or NIR you cannot scan across the HeNe wavelength at 633 nm (15,7800 cm^{-1}). If you need to scan across that region you will need to do two scans.
2) You need to use filter to remove the wavelengths above (for NIR) or below (for visible) the HeNe laser. If you want to work at $\lambda > 632$ nm (lower energy, IR side) you need to use the long pass red filter. If you want to work $\lambda < 632$ nm (higher energy) you need to use the short pass blue filter. Place the filter in the beampath. (There is a filter holder for it.)
3) In the Near IR there is a lot of light, so close the aperture to a very small value (maybe 0). If you do not see the interferogram go to diagnostics and reset the bench and make sure you are on gain 1. If you do not see the interferogram you will need to reduce the light more by either using a ND filter or turning the gain down of the Si detector (get the GLA).
4) In the visible you have very little light so open the apperture wide to see the interferogram. Use the autogain or gain 8 setting. If you cannot see the interferogram call the GLA.
5) Once you see the interferogram you need to go to diagnostics and align the beamsplitter.
6) If you align the beamsplitter without a interferogram it will not work and you need to reset the bench and then find the interferogram and then do align again.