

FeelIRIII Measuring Manual

For Thermo FT-IR Microscope Continuum

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Precautions when not using Rotator kit (optional product) at the end of this report

STEP1: Check Continuum settings

Confirm the setting of the optical path of the Continuum with a x15 Cassegrain.

- Maximize the aperture setting on the Continuum.

Turn on the aperture light to check whether it is maximal.

Thermo x15 Cassegrain and gold coated mirror

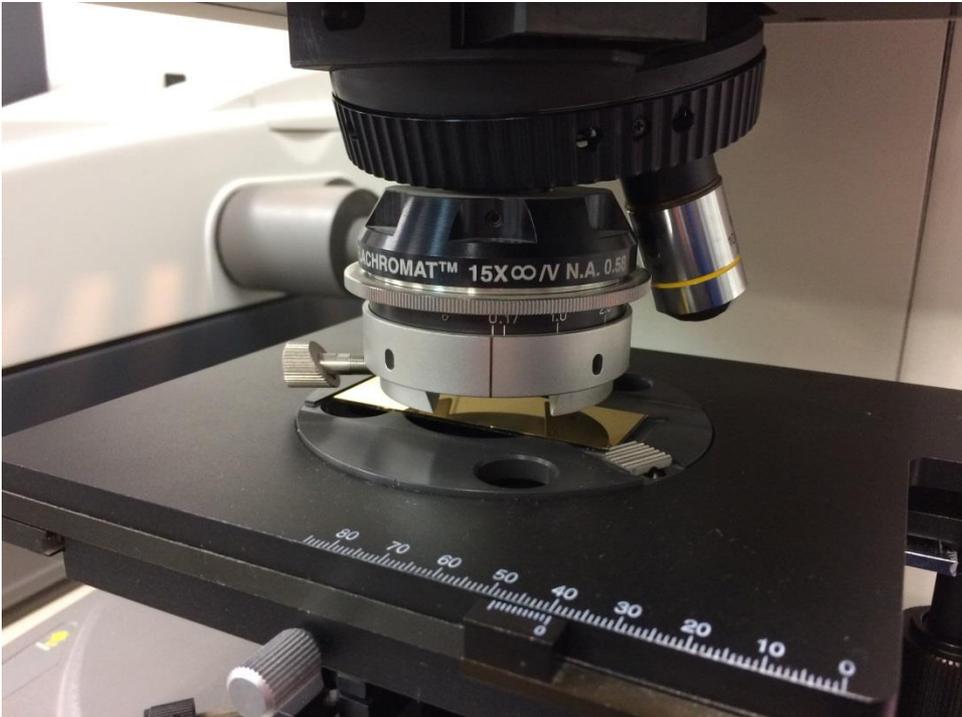
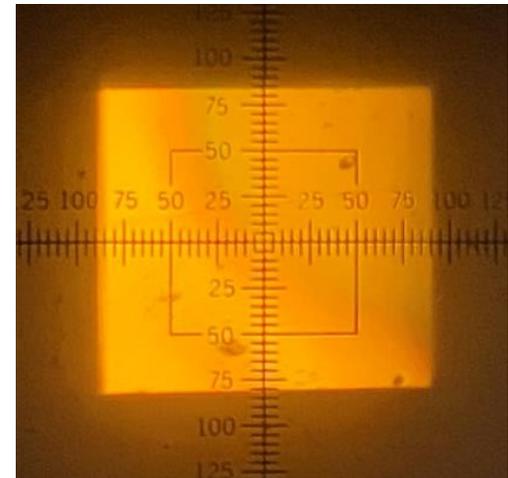


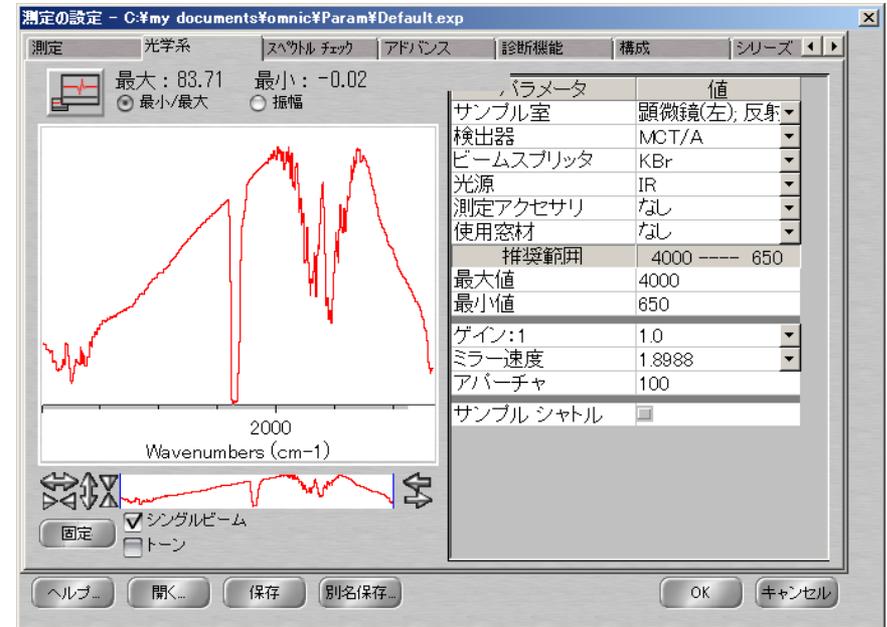
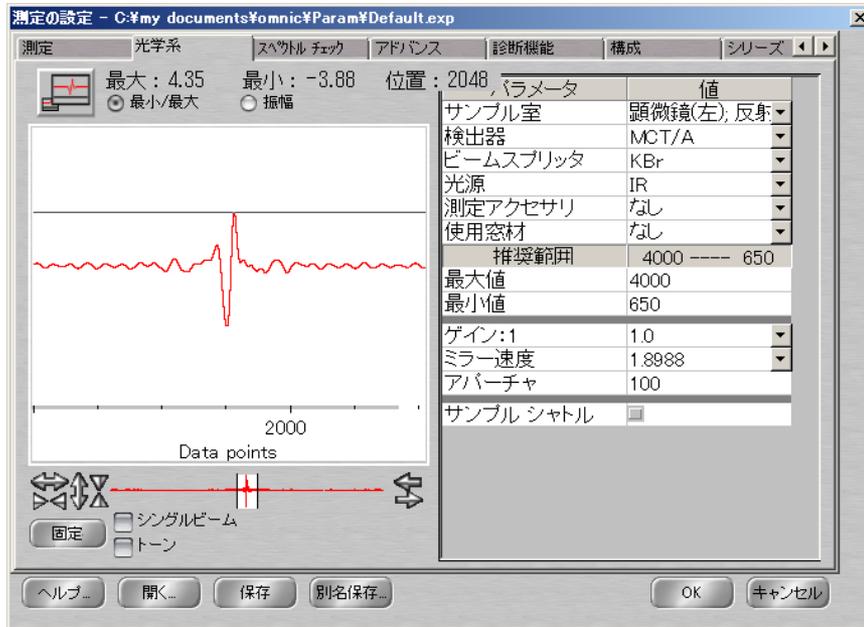
Image from eyepiece



Set Continuum aperture to max.

STEP2: Confirm energy with x15 Cassegrain

Confirm the optical path setting of the Continuum and check the energies using x15 Cassegrain.



- Sample compartment: Microscope Reflection measurement
- Detector: MCT/A

STEP3: Install the FeelIRIII rotator



Continuum Standard rotator

FeelIRIII rotator kit



Remove the standard rotator.



Install the FeelIRIII rotator.

STEP4: Connect the power connector to FeelIR III

This side up

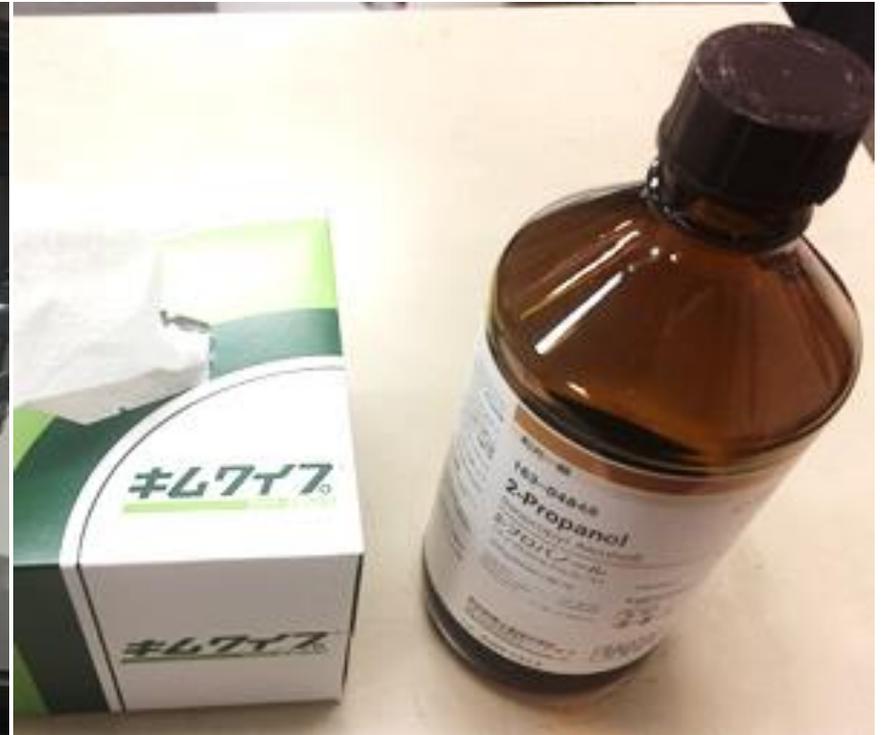
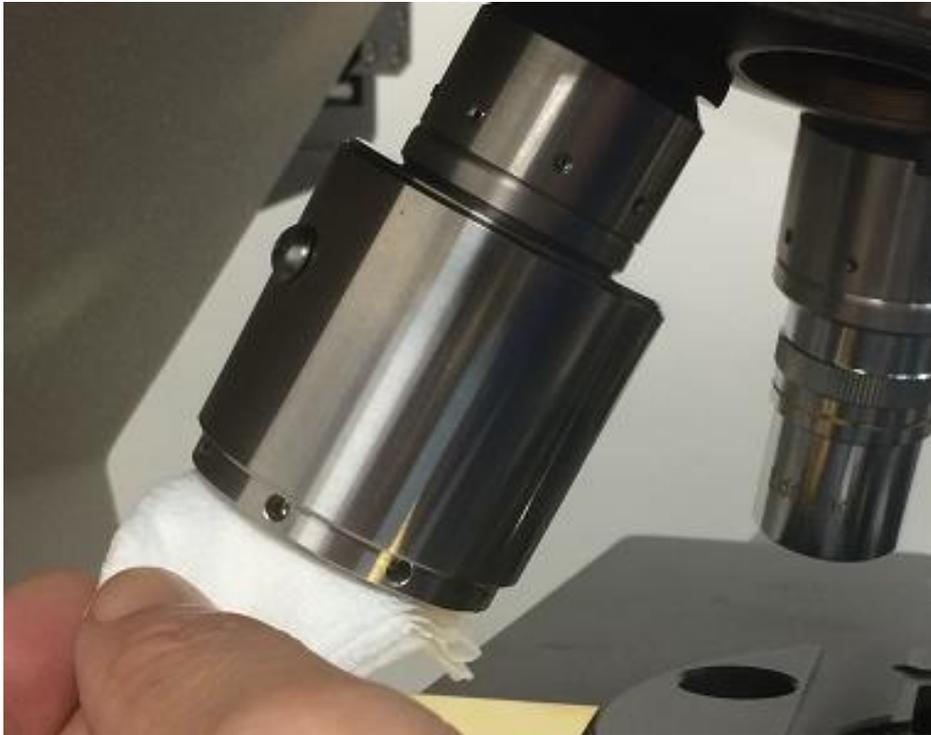


STEP5: Cleaning of diamond surfaces

- Clean the diamond surface with isopropanol, ethanol, etc.

Caution

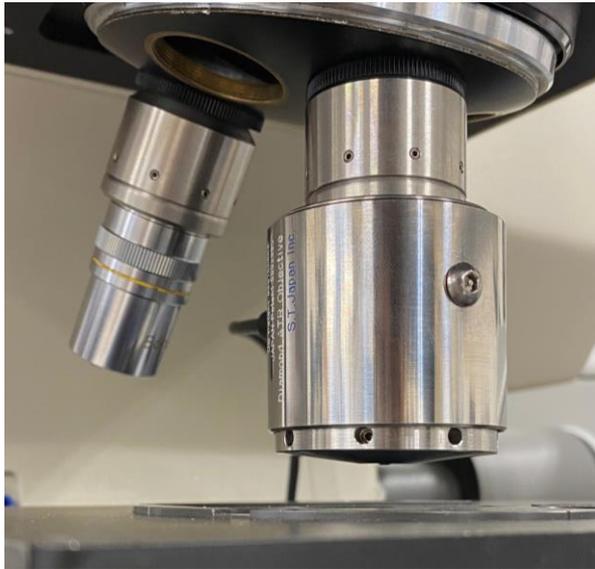
With Acetone or Toluene in the cleaning solvent, which may cause failure. Do not use it.



STEP6: Background measurements

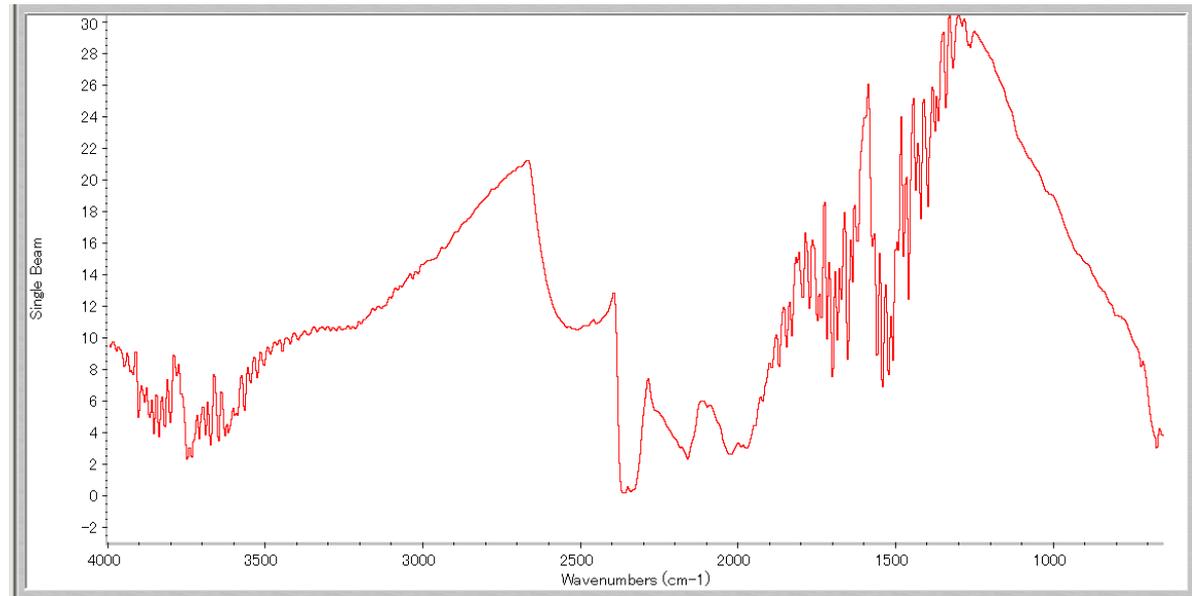
Scan the background without touching the diamond surface.

Background measurement



(Scan background in air)

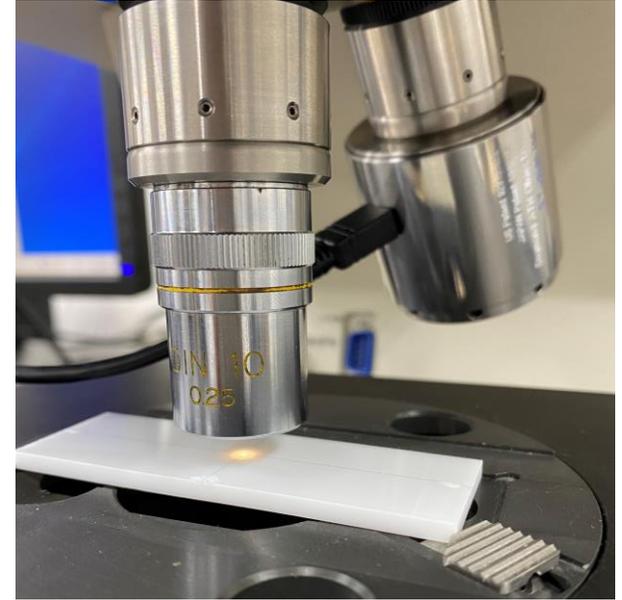
Background spectrum (diamond absorption spectrum)



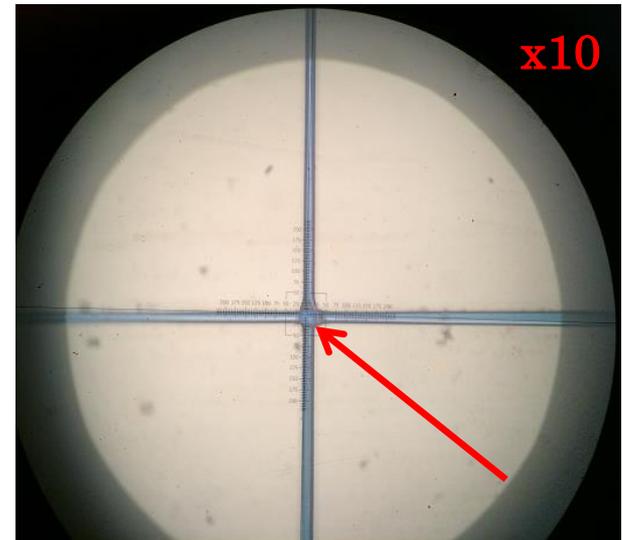
* FeelIRIII internal lighting does not affect background measurements. Can be turned on or off. Also, continuum lighting does not affect the measurement.

STEP7: Move stage to sample measurement point

Switch to a 10x lens and turn on the epi-illumination.



Move to the sample measurement position.
For example, the cross point is used as a sample.

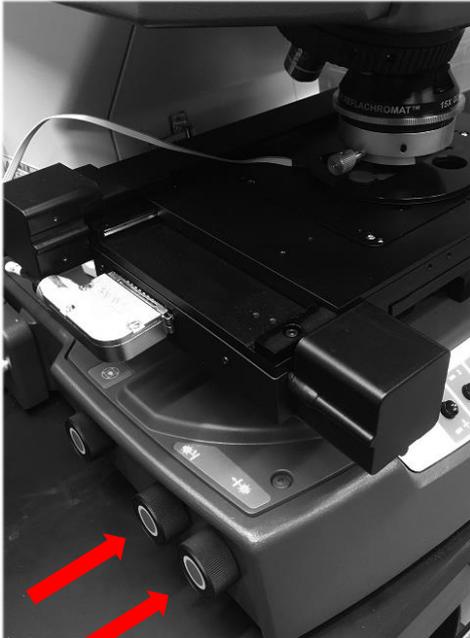


STEP8: Light Operations

1, Turn off the Continuum aperture and epi-illumination.

2, Turn on the FeelIRIII LED dimmer.

1



- Aperture Lighting: OFF
- Epi-illumination: OFF
- Transmission illumination: OFF or ON

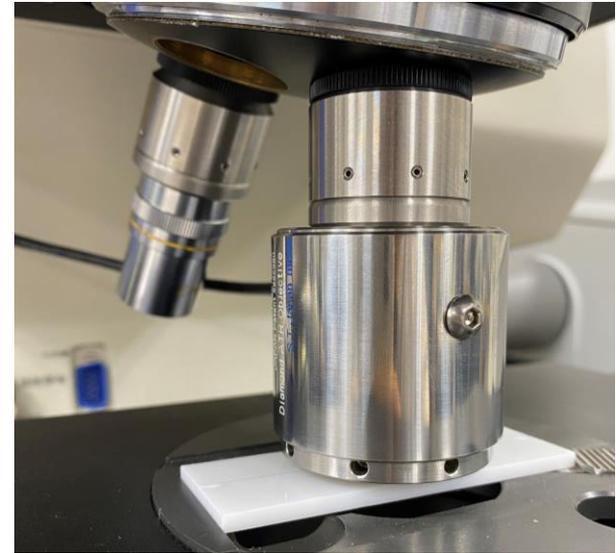
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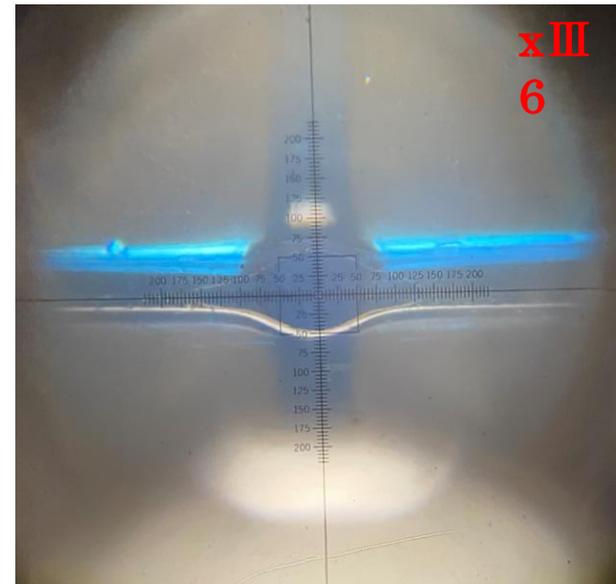
STEP9: Switching to FeelIR III

- Switch to FeelIR III.

FeelIR III



View of eyepiece

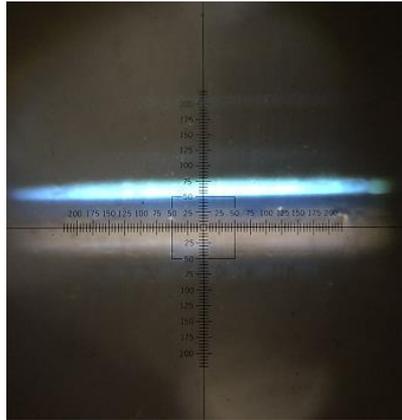


- Raise the stage and focus on the sample.
Then, move to the measurement point.

STEP10: Contact and measure the sample

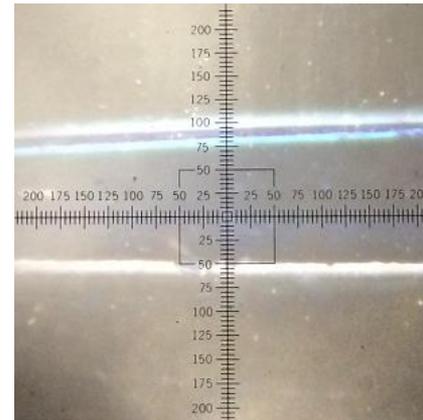
- Touch the sample to the diamond surface, then start the measurement.
- * The visual focus point is set just before contacting the samples on the diamonds.

Sample non-contact

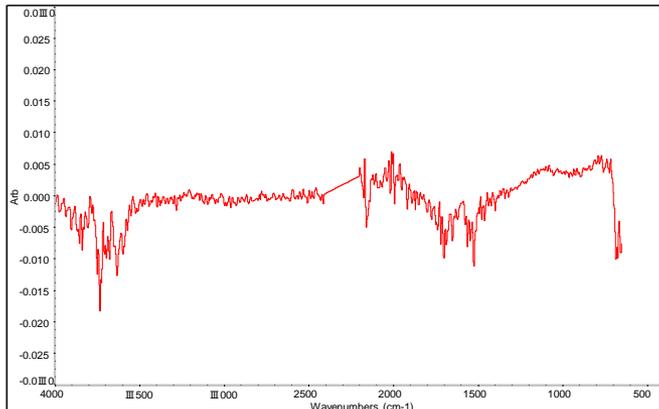


Sample:
25 um diameter nylon fiber

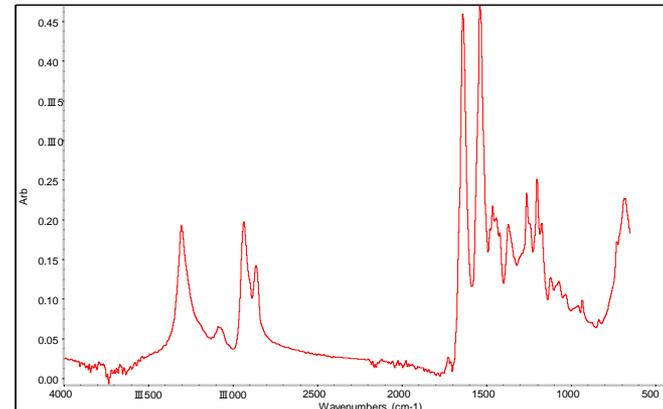
Sample contact



Spectrum

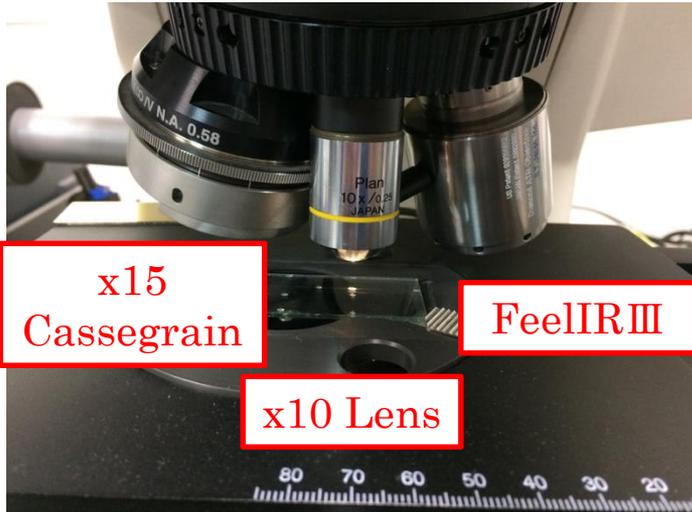


Spectrum



Precautions for not using Rotator kit (Option)

The magnification of FeelIRIII is x36. Therefore, it is difficult to find the measurement point only with FeelIRIII. Typically, the measurement position is determined using a low magnification lens such as a x10 lens.



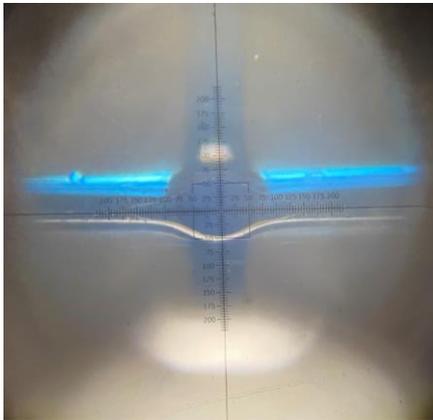
If the optional Rotator kit is not used, the optical axes of the Thermo x15 reflector and the objective x10 are aligned, but the optical axes of the FeelIRIII are slightly different.

For the above reasons, first use a standard sample (25um diameter cross fiber), find the cross position with FeelIRIII, then check the position with the objective x10 lens.

We need to know where the center position of the FeelIRIII on the x10 lens.

In this case, move to this position on the 10x lens and switch to FeelIRIII.

FeelIRIII (from eyepiece)



Switch

Objective x10 lens

