Thank you for purchasing Rainbow Viewer - MRV-330!!
Please read this manual carefully before assembly and use.

Please do not disassemble.
Please consult your dealer for any repair.
Please hold stage with both hands when carrying the device.
Stage may fall when carrying it by holding poll or observation window.
**Assembly**

1. Observation window
2. Stage (with light box / polarizer)
3. Support Pole
4. Polarizer
5. Digital camera holster
6. AC adapter

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1. Loosen the screw at the back of observation window.
2. Insert support pole into observation window holes from the top.

3. After pushing support pole to the end, tighten the screw at the back of observation window.
4. Loosen the screw at the back of stage.

5. Insert pole into stage holes.
   * Setting angle can be modified by adjusting the length of support pole below stage.
6. Tighten the screw at the back of stage.

7. Connect the AC adapter to back of stage and switch on a light.
8. Hold polarizer up over lit stage and find the angle with which light will be blocked.
   (i.e., the angle with which polarizers are lined crossed)

9. Insert the polarizer to observation window by keeping the angle found in ⑧
10. Finish!
Loosen the screw at the both side of observation window.

Fit slot of holster to observation window screw and tighten up for installing holster.

Loosen the silver screw of holster, and take out the φ52mm sleeve from inside.

Mount the camera, conversion adapter, raynox ring, φ52mm sleeve, as illustrated left.

Digital Camera Setting
Shooting can be done with AUTO.
Half press the shutter button would bring an object into focus.

Adjust the stage to an angle suitable to your work and then turn on power.

When holding polarizer up over lit stage, an angle which would block the light completely is crossed nicols method, and an angle which transmit light is parallel nicols method.

Place transparent object on the stage and start inspecting strain.

Use digital camera for documentation.
**Observation methods**

Rainbow viewer MRV-330LP is capable of **Crossed Nicols** and **Parallel Nicols** method inspection. In addition to the capabilities of the MRV-330LP, the MRV-330FW which comes with an additional 1λ filter [MRV-FW] would allow inspection with **Sensitive Color Method** as well.

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**Parallel Nicols Method**

In the Parallel Nicols Method, the whole visual field looks bright (white). When the observation sample is put in, the part with the strain looks dark brown, and the part with no strain looks bright (white) just as whole visual field.

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**Crossed Nicols Method**

In the Crossed Nicols Method, the whole visual field looks dark (black). When the observation sample is put in, the part with the strain looks bright (white), and the part with no strain looks dark (black) just as whole visual field. Color changes as strain gets stronger from white to blue, green, red, etc.

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**Sensitive Color Method**

In the Sensitive-Color Method, the whole visual field looks reddish purple color. (please set gray side of MRV-FW facing upward) This color tone is called sensitive color and suited for inspection of less strained object such as glass. When the sample is put in, the part with the strain changes to green/blue, or orange/yellow color. The part with no strain looks reddish purple just as whole visual field.

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**S**ensitive color analyzer MRV-FW is sold separately.