Pleiger Laseroptik

CLEANING OF OPTICS

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Cleaning of Optics

General:

All materials used for precision optics are fragile - whether single crystal or polycrystalline - large or fine grained. They are not as strong as glass and will not withstand procedures normally used on glass parts.

- Infrared optics should never be touched. Always wear powder-free finger cots or surgical gloves. Dirt and oil from the skin can severely contaminate optics, causing a major reduction in performance.
- Do not use any tools to handle optics.
- Always place optics on the lens tissue supplied for protection.
- Never place optics on a hard or rough surface. Infrared laser optics can be easily scratched.
- Bare gold or bare copper should never be cleaned or touched.

Note:
Except for Method 1, the cleaning procedures described here should not be used for new optics. New optics are cleaned and packaged prior to dispatch to ensure their high-quality condition upon receipt. If you suspect a problem with contamination, or other cosmetic defects with a new optic, please contact Pleiger immediately.

Method 1 - Mild Cleaning for Light Contamination (dust, lint particles)

Use an air bulb to blow off any loose contaminants from the surface of the optic before proceeding to the cleaning steps. If this step does not remove the contamination, continue to Method 2.

Note:
Avoid using shop air lines because they usually contain significant amounts of oil and water. These contaminants can form detrimental absorbing films on optical surfaces.

Method 2 - Mild Cleaning for Light Contamination (smudges, fingerprints)

I. Dampen an unused cotton swab or a cotton ball with acetone or i-propanol. HPLC-grade Acetone and i-Propanol recommended.
II. Gently wipe the surface with the damp cotton. Do not rub hard.
III. Drag the cotton across the surface just fast enough so that the liquid evaporates right behind the cotton. This should leave no streaks.

Note:

- Use only paper-bodied cotton swabs and high-quality surgical cotton balls.

Method 2 (alternative method) "Drop and Drag " - Mild Cleaning for Light Contamination

Note: The "Drop and Drag" method is not a preferred cleaning method.

I. Lay a piece of lens tissue on the surface of the optic.
II. Using an eyedropper, squeeze a few drops of acetone onto the lens tissue, so that the complete diameter of the optic is wetted.
III. Without lifting the lens tissue, drag the lens tissue across the optic just fast enough so that the liquid evaporates behind the tissue. This should leave no streaks

Note:

- Use only the lens tissue supplied in the optics cleaning kit or another high-quality lens tissue.
- HPLC-grade Acetone and i-Propanol recommended

Examination of Cleaned Optic

The final step is to carefully examine the surface of the optic under good light in front of a black background.

Note:
Certain types of contamination and damage such as metal splatter, pits, etc, cannot be removed. If the optic shows this type of contamination or damage, it will probably need to be reworked or replaced. If reworking of an optic is necessary, contact Pleiger to make arrangements to return the part for repolishing and recoating.