

Getting Started With Your Fiber Optic Probe

Congratulations on the purchase of your fiber optic probe product. Your probe product is a robust passive optical tool that has been designed to provide years of spectroscopic measurements. To keep your probe protected while not in use it has been shipped to you in a convenient storage case. When removing or storing your probe and during routine handling when in use, it is best to follow these probe handling guidelines.

- Handle the probe with care. The probe is a precise optical device and while designed to be robust, the optical components react adversely to improper handling.
- Handle the probe by its machined components (e.g. Probe Body, Jacket Breakout, Leg Terminations)
- Avoid handling the probe by the protective jacketing whenever possible.
- Do not use the probe in environments or with chemicals with which it is not compatible.
- Avoid severe bends to the probe. The optical fibers in the probe can be broken when pulled on or if they are bent too severely. Avoid bends smaller than 6 inch (~15 cm) bend radii.
- When the probe is not going to be used for an extended period of time:
 - Clean the probe as described in this document.
 - Replace all protective caps.
 - Store in its protective case.
- Periodically inspect and test your probe using the simple procedure provided in this quick start guide.

If you follow these simple instructions, your fiber optic probe will provide you with years of problem free measurements.

Good luck!

Verifying the Health of Your Fiber Optic Probe

Your fiber optic probe product is inspected and tested prior to shipment as shown by the certification that ships with each probe. You are encouraged to test your probe upon receipt on a known sample to create benchmark performance against which future tests can be compared. For Reflectance and Fluorescence probes you should make a measurement on a known sample and save the file using a folder that will be accessible in the future. It may be helpful to name the file with the Probe Part Number and Serial Number for easy reference.

For UV/Vis/NIR dip probes, you can use the following simple procedure to make a verification measurement on your Agilent Cary spectrophotometer using the WinUV Scan Software.

- Connect the Fiber Optic Loop to the Fiber Optic Coupler installed in your Cary Spectrophotometer.
- Open the Cary WinUV Scan Application.
- Configure the Scan Settings:
 - Y mode: % Transmission
 - Wavelength Range: Full Spectrum
 - Averaging Time: 0.25 seconds or greater
 - Data Interval: 1 – 3 nm
- Collect Baseline Spectrum
- Disconnect the Fiber Optic Loop from the Fiber Optic Coupler.
- Connect both legs of your Fiber Optic Probe to the Fiber Optic Coupler. *Note: Some probes have legs that are labeled "Light In" and "Light Out", Follow those indicators when present making sure you connect the Light Out port of the Fiber Optic Coupler to the Light In connection on the probe and the Light Out connection on the probe to the Light In port on the Fiber Optic Coupler.*
- Collect the Baseline Corrected scan of your Fiber Optic Probe.
- Save the results to a location and a file that will be available for reference in the future using a file name that includes the probe Part Number and Serial Number.
- If you obtain unexpected results, refer to the Troubleshooting section of this document.

Routine Maintenance and Cleaning

Your Fiber Optic Probe requires little maintenance beyond regularly cleaning. To maintain the integrity of your measurement results, it is best clean your probe prior to and immediately after use. The most important surfaces to keep clean are the optical surfaces (e.g. polished connector ends, lenses and mirrors) and any surfaces that get exposed to the samples being measured to prevent contamination and carry over.

Recommended Cleaning Procedure:

Required Equipment:

Acetone, Methanol or Isopropyl Alcohol
 Lint Free Wipes Cleaning Wipes
 Cleaning Swabs
 Clean Compressed (Canned) Air (Optional)
 Ultrasonic Cleaner (Optional)

Instructions:

- Clean Fiber Connectors on probe legs with a lint free wipe or swab moistened with available cleaning solution. Dry surfaces with either a dry lint free wipe or cleaned compressed air if available.
- For fixed tip probes, clean the mirror and lens in the sampling tip with a lint free wipe or swab moistened with available cleaning solution. Dry surfaces with either a dry lint free wipe or cleaned compressed air if available.
- Clean the surfaces of the probe that come in contact with your sample thoroughly with a lint free wipe or swab moistened with available cleaning solution to avoid sample carryover. Dry surfaces with either a dry lint free wipe or cleaned compressed air if available.
- For Removable Tip Probes, remove the installed tip prior to cleaning and then clean the mirror in the replaceable tip and the lens on the probe body with a lint free wipe or swab moistened with available cleaning solution. Clean all probe surfaces that are exposed to the sample to prevent carryover. Dry surfaces with either a dry lint free wipe or cleaned compressed air if available.
- **Sample Specific Cleaning Procedure:** If your sample requires very specific cleaning solutions for neutralization of acids or elimination of proteins for examples. Perform that cleaning step first prior to the standard cleaning.
- Occasional brief (<30 secs) ultrasonic cleaning of the probe tips and the probe sample end is acceptable with methanol, alcohol or water.

Troubleshooting

Should you encounter unexpected results with your probe, you can try the following troubleshooting steps to identify the cause and take appropriate corrective actions.

Symptom	Possible Cause	Fix
Low Transmission	<ul style="list-style-type: none"> • Dirty optical surfaces • Coupler Misaligned • Confirm replaceable tips fully screwed on to probe 	<ul style="list-style-type: none"> • Clean Probe • Align Coupler • Check that replaceable tip fully screwed on.
High Than Expected Absorbance	<ul style="list-style-type: none"> • Dirty optical surfaces • Confirm replaceable tips fully screwed on to probe 	<ul style="list-style-type: none"> • Clean Probe • Check that replaceable tip fully screwed on.
Consistent Absorbance Readings or 10 Abs	<ul style="list-style-type: none"> • Possible Broken Fiber inside probe. • Confirm probe legs are properly connected to the Fiber Optic Coupler. 	<ul style="list-style-type: none"> • Check probe connections. • Run the probe verification test and compare to initial scan.
Intermittent Absorbance Readings of 10 Abs	<ul style="list-style-type: none"> • Possible cleaved Fiber inside probe. 	<ul style="list-style-type: none"> • Run the probe verification test with the probe in different positions. Look for changes compared to initial scan.

For Technical Assistance Contact:

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