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EasyCal™ Service Support Capabilities

Western Test Solutions is a specialized Analytical Instrumentation Service, Supply and Development Company located in Reno Nevada. We focus both on standard and customized instrumentation and calibration solutions.

Western Test Solutions founder and engineering personnel have over 25 years of combined experience in electronic, chemical, and mechanical product development, training, service, repair, and support. We have supported a wide range of industries which include Bio-Pharma, Food & Beverage, Specialty Chemical, industries that utilize the EasyCal™. calibration methodology We service both laboratory/metrology and production environment equipment.

We offer EasyCal™ calibration recertification, and replacement component services that include:

- **Bandpass Filters:** Our filters are constructed using the highest quality coatings and materials, and can be customized to accommodate a wide range of wavelengths and physical dimensions. Superior reliability and signal-to-noise ratios guarantee consistent and reliable wet or dry calibrations.



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- **Nist Filters:** NIST filters (neutral density filter) are a maintenance component that require in many cases an annual recertification. The filter maintenance and scan data is maintained for traceability, and also utilized as a tool to determine the overall quality of the filter. Each filter is scanned and compared to the last scan data of each filter. Drift tolerances are $\pm .1\%$ of the last scan. Filters that test excessive transmission variances are replaced. Additional scan verifications are also performed on filters with excessive variances under the microscope for "Pin holing" to verify the type of deterioration of the filter coating.

Filter coatings will degrade over time exposed to UV light and change their transmission levels. The data collected and maintained, aids Western Test solutions to ensure the filters do not have any manufacturing issues associated with the coatings. Excessive drift and transmission trends are noted and WTS contacts the filter manufacturer to investigate the issue if required to do so.



EasyCal™ detector assembly.

Certification/Validation methods:

Independent testing or revalidation of components such as filters or complete flow cell assemblies such as Wedgewood Bio-Station's™ are critical for many end users, especially those working with validated processes. Western Test Solutions utilizes the **SHIMADZU UV160U** spectrophotometer to scan and recertify the

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Western Test Solutions tests the EasyCal™ detector and flow cell as a complete assembly whenever possible.

The EasyCal™ detector **can be recertified** and tested **stand alone, however**, experience and extensive testing has shown inconsistencies regarding the **operational readiness** of a complete flow cell assembly that has not been fully tested together with the lamp assembly and EasyCal™ detector **may be compromised**, and in many cases the loop either will not calibrate correctly, or the calibration headroom is nonexistent and the loop is on the edge of specification tolerances.

Western Test Solutions also has noted the inconsistency of various filter manufacturers products regarding transmission levels among other filter parameters of their product from a lot to lot manufacturing basis. The tolerances of the filter, and filter combinations can be very difficult to effect a recalibration of the instrument, and in some cases make the instrument unable to calibrate. Imagine two filters that meet specifications, but for some reason will not work well enough together to effect a successful calibration. The WTS filters tight acceptance criteria, make filter placement, any combination, a guaranteed successful loop calibration. One filter fits any location.

NOTE: WTS cannot and will not guarantee a successful loop calibration if other manufacturer filters are utilized in either the reference or measurement filter locations of the flow cell.

Spare, and replacement filters from Western Test Solutions are sold as a **set**, one reference and one detector filter, to ensure the flow cell assembly does in fact marry up together with any **Wedgewood™**, or Endress Hauser UV analyzer/transmitter. Western Test Solutions sell both filters to ensure other manufacturers parts do not create a loop calibration failure.

Functional testing of the flow cell consists of tests performed in operation with the various instruments employed in the field today, **Integra**, and **model 662** UV analyzers. You can be assured your loop will work well after a Western Test Solutions calibration!

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