

## Fluctuations in readings when using the UV-Vis Calibration Kit - Tech Information

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### **Overview:**

Inconsistent or fluctuating absorbance readings during UV-Vis calibration are most commonly attributed to lamp degradation. This issue can significantly impact the accuracy and reliability of your qualification data.

### **Lamp Lifespan and Performance**

UV-Vis spectrophotometers typically use either xenon or deuterium lamps:

- Xenon lamps: Rated for ~500 hours of use.
- Deuterium lamps: Typically last between 1,000–3,000 hours, depending on the manufacturer and operating conditions.

Even within their rated lifespan, lamp output can degrade gradually, leading to increased baseline noise, drift, or erratic absorbance values—especially in the lower UV range.

If you're experiencing fluctuations and the lamp's usage hours are unknown or approaching end-of-life, lamp replacement should be your first step in troubleshooting.

### **Using the UV-Vis Calibration Kit as a Diagnostic Tool**

The Chemical Solutions™ UV-Vis Calibration Kit is designed to detect early signs of instrument instability, including:

- Wavelength accuracy drift
- Photometric accuracy issues
- Baseline noise and instability

By running routine qualifications with the kit, you can identify lamp-related issues before they affect analytical results. This proactive approach helps maintain compliance with USP, EP, and other regulatory standards.

### **Additional Troubleshooting Tips**


If lamp replacement does not resolve the issue:

- Check the detector optics for dust or contamination.
- Verify baseline stability with a blank run.
- Inspect the sample compartment for stray light or temperature fluctuations.

- Schedule a service call to evaluate electronics or detector performance.

### **Best Practices for Lamp Monitoring**

- Log lamp usage hours regularly.
- Replace lamps proactively based on manufacturer specs or performance trends.
- Store spare lamps in a clean, dry, and temperature-controlled environment.

 Click [HERE](#) for UV-Vis Calibration Kit Ordering Information and Images

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