

Enhance Your Capabilities with the Agilent Cary 60 UV-Vis Spectrophotometer and Fiber Optic Probes

Improve your lab operations





Remote capabilities with fiber optic probes

The **Agilent Cary 60 UV-Vis spectrophotometer** can be paired with fiber optic probes to unlock the potential for measurements that are not possible with traditional methods. These fiber optic probes allow for remote analysis, enabling a range of difficult measurements to be obtained, such as:

- Measurements of small volumes, or of hot/cold samples
- Measurements in controlled environments such as fume hoods or glove boxes
- Measurements from areas in which it is difficult to obtain a sample, such as reaction vessels

This remote analysis capability therefore enhances safety and convenience in the lab.

Enhanced workflow efficiency

Switching to the fiber optic probes can dramatically improve the UV-Vis analysis workflow. Unlike traditional cuvette analyses, fiber optic probes are significantly easier to wash and clean. In addition, the probes are very robust, unlike cuvettes (particularly quartz/glass), which can be expensive to replace when broken. This translates into a faster and more efficient process, allowing operators to focus on their analysis rather than on sample introduction.



Performance comparison: fiber optic probe vs. cuvettes

Our comparative study displays the reliability of the fiber optic probe for quick and easy measurements. The probe (1 cm pathlength) was connected to the Cary 60 UV-Vis via the fiber optic coupler to measure the absorbance of five standards ($n = 5$) of thymol blue in test tubes where serial dilutions had taken place.

Two experiments were performed

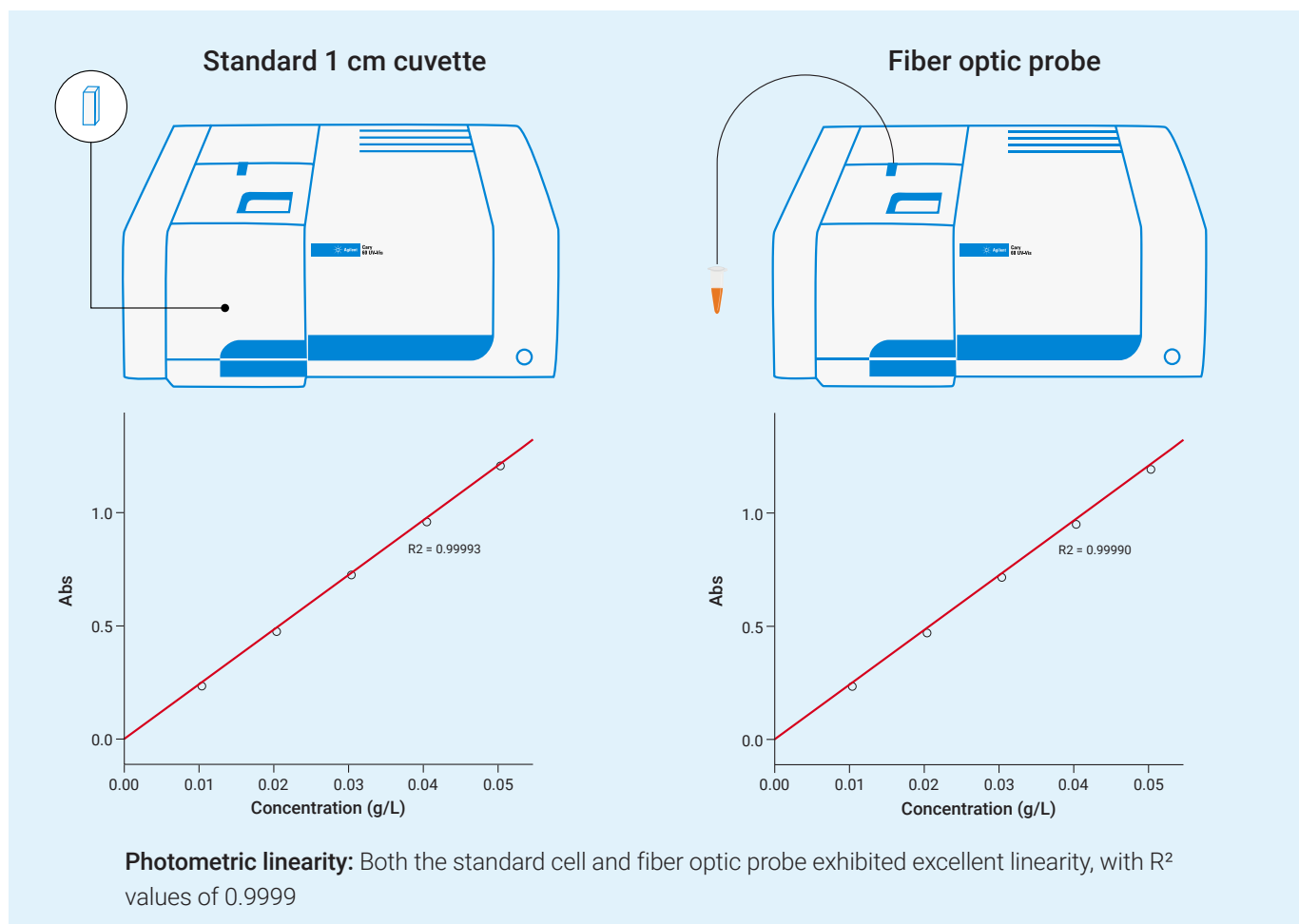


Table 1. Results comparison

Standard number	Concentration (g/L)	Standard cell absorbance	Fiber optic probe absorbance	Difference in absorbance
1	0.1	0.2462	0.2422	0.004
2	0.2	0.4894	0.4880	0.0014
3	0.3	0.7355	0.7397	-0.0042
4	0.4	0.9737	0.9743	-0.0006
5	0.5	1.2205	1.2253	-0.0048

Comparable results for instant reads: The reading differences between the two setups are minimal, with the largest difference being 0.0048.



Improve your lab operations

The Agilent Cary 60 UV-Vis spectrophotometer combined with fiber optic probes offers a simple approach to sample measurement, providing remote capabilities and improving workflow efficiency. Enhance your lab operations and experience the benefits of this powerful combination.

Why choose the fiber optic probe?

The fiber optic probe provides a range of benefits:

- **Ease of use:** The probe is simple to operate, reducing the time and effort required for measurements.
- **Durability:** Built to withstand rigorous laboratory conditions, the probe is made from quartz, PTFE, stainless steel, and torlon, ensuring long-term reliability.
- **Lab efficiency:** The probe provides time savings and increased productivity.
- **Cost saving:** No cuvette is required.
- **Enhanced safety:** Handling of hazardous chemicals are not required.
- **Remote measurement:** Samples can be measured from any vessel type, up to meters away from the instrument.

References

1. Fyfe, D. and Wang, XD. Simple, automated measurements of the photocatalytic properties of colorimetric species using the Agilent Cary 60 UV-Vis spectrophotometer with fiber optics. Agilent Technologies application note, publication number 5990-7864EN, **2011**.
2. Fyfe, D. and Comerford, J. Measuring the Purity of Low Volumes of DNA at 4 °C Using the Agilent Cary 60 UV-Vis Spectrophotometer with Fiber-Optics Microprobe. Agilent Technologies application note, publication number 5990-7863EN, **2014**.
3. Comerford, J. Nitrate Analysis of Water Using a Fiber-Optics Dip Probe. Agilent Technologies application note, publication number 5990-7932EN, **2021**.

Further information

- [Cary 60 UV-Vis spectrophotometer](#)
- [Cary WinUV software for UV-Vis applications](#)
- [UV-Vis spectroscopy and spectrophotometer FAQ](#)
- [Remote Fiber Optic Spectroscopy](#)

www.agilent.com/chem/cary60

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