

Micro-Spot Variable-Angle Transmittance Spectrometer

The Micro-Spot Variable-Angle Transmittance Spectrometer (μ VATS) is an optical transmission spectral measurement system designed to measure angle-resolved optical spectral transmittance through microscopic regions of optical materials and surface coatings. Unlike conventional optical transmittance measurement systems that require large, flat samples, the μ VATS delivers high-precision spectral measurements on micro-scale spots in the range from 5 μ m to 200 μ m, enabling accurate angle-resolved characterization of micro-structured, free-form curved, and spatially non-uniform coating surfaces.



Product Specifications:

Variable-Angle Micro-Spot Measurement

- Small spot size (1/e): 5 μ m – 200 μ m
- Incident angle range: 0° to 70°
- Angular resolution: $\leq 0.5^\circ$
- Transmittance accuracy: $< 0.02\%$

Fast and Automated Scanning

- Programmable angle sweeps
- High-throughput spectral acquisition
- Batch measurement support

Wavelength Range

- Standard: 350 nm – 1000 nm
- Optional: 200 nm – 2500 nm
- Spectral resolution: 0.25 nm (typical)

Software & Data Analysis

- Real-time spectral visualization
- Angle-resolved transmittance maps: $T(\lambda, \theta)$
- Export to CSV / MATLAB / Python
- Optional thin-film thickness and material analysis

What Makes μ VATS Different:

Feature	μ VATS	Conventional Products
Spot size	5–200 μ m	1–10 mm
Angle-resolved	0°–70°	Limited
Micro-area mapping	✓	X
Curved surface capability	✓	Limited
Thin-film analysis	✓	Partial

Applications:

Biomedical Device and Optical Coatings

- Angle-sensitive optical coatings
- Endoscope optics (curved surfaces)
- Micro-sample optical absorption spectroscopy

AR/VR Display and Semiconductor

- Micro-optical device coatings for AR/VR
- ITO, oxide, and multilayer films

- Micro-LED coatings and structures
- Wafer-level thin films
- Optical packaging

Advanced Photonics

- Metasurfaces
- Diffractive optics
- Liquid crystal device