# Technical Specifications

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|---|---|
| Model Number | ASIS-UVSPEC |
| Product Name | Ultraviolet-Visible Spectrometer |
| Version | V1.0 |
| Revision Date | 07.28.2025 |



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## 1. Product Overview

The ASIS-UVSPEC is an embedded ultraviolet-visible spectrometer module designed for high-sensitivity fluorescence spectroscopy, particularly in trace-level rare earth element (REE) detection. Integrating a UV light source and a precision-optimized optical path, the system maximizes light collection efficiency while minimizing optical losses. A built-in lock-in amplifier further enhances the signal-to-noise ratio, enabling the use of low-power UV excitation sources without compromising analytical performance.

The ASIS-UVSPEC enables sub-ppm detection of rare earth elements such as Dysprosium (Dy) and Samarium (Sm), and sub-ppb detection of contaminants like Lead (Pb) and Europium (Eu) in REE solutions. A tunable entrance slit balances spectral resolution and sensitivity, offering adaptable performance for a wide range of analytical tasks.

Its compact architecture integrates optics, electronics, and signal processing into a single module, making it ideal for environmental monitoring, chemical analysis, and materials characterization, especially in applications that require high precision, energy efficiency, and compact size.

## 2. Optical Specifications

| Parameter | ASIS-UVSPEC |
|---|---|
| Operating Wavelength (nm) | 400-700 |
| Spectral Resolution (nm) | 7 nm @ slit 1 mm (adjustable) |
| Wavelength Accuracy (nm) | ±1 |
| Wavelength Repeatability (nm) | ±0.1 |
| Sensor Integration Time Range (ms) | 0.1-15 |
| Entrance Slit Width (mm) | 0.05-2.0 (adjustable) |
| Sensor | 128 Element Photodiode Array |
| Wavelength Dispersion Linearity (nm) | 1.85 (RMSE) |



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## 3. Other Specifications

| Parameter | ASIS-UVSPEC |
|---|---|
| Communication Interface | USB 2.0 |
| Operating System | Windows 10/11 |
| Input Power | 5V @ 3A |
| Operating Temperature (°C) | 0-50 |
| Dimensions (mm) | 155 × 125 × 80 |
| Weight (kg) | 1.73 |



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