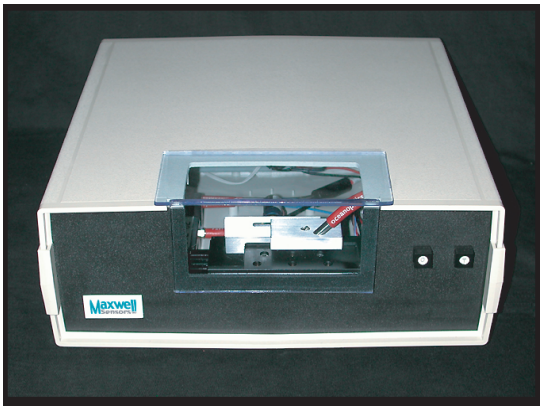
FS-Scanner™

- Fluorescence Strip Scanner for Strip Characterization and In Vitro Diagnostics



INTRODUCTION

Immunochromatography color strips are developed for rapid testing of diseases or pathogens, but the detection is based on visual inspection or absorption measurement, which has been reported to have limited sensitivity. The interest of using fluorescence as a detection method has increased dramatically in recent years. Fluorescence immunoassay (FIA) has become a promising in vitro diagnostic method because it offers better sensitivity in comparison to the color strips. The Fluorescence Strip Scanner (FS-Scanner) is designed with the capability to scan multiple spots (samples, controls) and the flexibility to use different excitation and fluorescence wavelengths for a variety of fluorophores. The portable FS-Scanner offers sensitivity, accuracy, ease of use, light weight, and affordability. The system can be used for strip characterization and tailed-made as a reader with a specific excitation light source for IVD applications.

FEATURES

FS-Scanner is equipped with a light source, optical fiber, scanner, spectrometer, detector, and software. The fluorescence signal is carried through an optical fiber probe into a spectrometer and CCD for spectral analysis. The scanner scans a three-inch strip (with or without a plastic cartridge) with a spatial resolution of 0.1 mm in a few seconds. Push buttons (e.g., Control, Test) are used to move the optical probe directly to the specific location. Since the selection of excitation light source and wavelength depends on the choice of the fluorophore, the light source used in the system is changeable. The generic FS-Scanner system is facilitated with a red diode laser with a wavelength at 635 nm for excitation. FS-Scanner requires an external PC with a USB connection for signal collection and data processing. Both fluorescence spectrum and intensity are displayed on the screen.

APPLICATIONS

- *Immunoassay (bacteria, virus, toxin, and pathogen) and proteomics strip tests*
- *Nucleic acid, DNA assay, and Genomics strip tests*
- *Rapid and point-of-care clinical diagnostics*
- *Food and environmental tests*
- *Biothreat agent and toxin tests*
- *Strip fabrication and characterization tests*

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SPECIFICATIONS

Strip format:	1.0" x 4" x 0.5" with or without plastic cartridge.
	Configurable to customer dimension.
Scan distance:	3 inch
Scan spatial resolution:	0.1 mm
Illumination spot size:	1 mm
Fluorescence wavelength:	300 ~ 1,000 nm in spectral display
Dynamic range:	Four decades
Optical detector:	Linear CCD
Integration time:	0.01 ~ 10.0 S
Interface & OS:	USB to PC or Notebook (PC or Notebook not included);
	Windows XP, 2000
Software:	CD with user friendly software
Data output:	Spectrum and Intensity
Power requirement:	115V, 60Hz
Dimensions:	11" W x 12" L x 4.5" H (28cm W x 30cm L x 11cm H)
Weight:	7.5 lbs. (3.4 kg)
Excitation light source:	Diode laser 635 nm (5 -10 mW)
	LEDs 380nm, 475nm, 518nm, 590nm, 640nm (35-50μW)
	Call for other light sources (Xenon, Deuterium, etc.), not included
Optical filter:	Depends on the wavelength selection

FS-SCANNER USERS

- *Clinical diagnostic industry*
- *IVD manufacturers*
- *Hospital research laboratories*
- *Food industry*
- *Environmental testing*

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