

SPECTROSCOPY / DATA SHEET

SP 103Z

Fluorescence Spectrophotometer

High-sensitivity fluorescence platform for spectral, time-resolved and three-dimensional measurements.

Overview

- SP 103Z is a high-end research fluorescence spectrophotometer for rapid spectral, time, intensity and three-dimensional fluorescence measurements.
- The system combines a pulsed xenon source, double-monochromator optical design and photomultiplier detection for high sensitivity and stable analysis.
- Its measurement scope covers materials research, pharmaceutical analysis, water quality, food safety and environmental monitoring.



Wavelength range 200–900 nm	Resolution 1.0 nm	SNR >200:1 water Raman	Scan speed Up to 60,000 nm/min
Data modes Fluorescence / phosphorescence / 3D	Minimum sample 0.5 mL	Interface USB	Size / weight 620 × 550 × 285 mm / approx. 45 kg

Key Advantages

- Pulsed xenon lamp and double-monochromator optical design support ratio and transmission-channel correction.
- Imported long-life xenon lamp and PMT components support high sensitivity and stable measurements.
- Wide 200–900 nm spectrum with multiple selectable bandwidths.
- High-speed wavelength scanning can complete a three-dimensional fluorescence map within approximately one minute.
- Micro-volume measurement design supports samples down to 0.5 mL.
- Access control, permissions, audit trail and electronic-signature functions are stated for FDA/GMP/GLP-oriented workflows; optional 3Q service is available.

Application Scenarios

- Vitamins and trace elements.
- Food safety, harmful substances and food-color additives.
- Pesticide-residue and environmental-water analysis.
- Biomedical research involving DNA, RNA, proteins, enzymes and cells.
- Fluorescent materials, ecological geoscience and scientific research.

Measurement Principle

The SP 103Z uses a pulsed xenon lamp as the excitation source. A double-monochromator optical system separates excitation and emission wavelengths, while a photomultiplier tube detects the fluorescence signal. Excitation, emission and synchronous scans can be combined with fluorescence, luminescence, phosphorescence and three-dimensional scanning modes to analyze spectral intensity, wavelength and time-dependent behavior.

Technical Specifications

Item	Specification
Wavelength range	200–900 nm and zero-order light
Excitation / emission wavelength	Excitation 300 nm / emission 400 nm
Water Raman signal-to-noise	Water Raman peak (P-P) >200:1
Resolution	1.0 nm
Wavelength accuracy	<1 nm
Wavelength repeatability	<1 nm
Gain	4 levels; adjustable
EX / EM bandwidth	1.0, 2.0, 5.0, 10.0 and 20.0 nm
Response speed	4 ms–8 s; automatically adjustable
PMT voltage	0–1000 V
Photometric range	–9999–9999
Detector	Imported original photomultiplier tube (PMT)
Monochromator	High-resolution concave blazed holographic grating
Data modes	Fluorescence, luminescence and phosphorescence; 3D scanning
Scan modes	Excitation, emission and synchronous
Minimum sample volume	0.5 mL using a standard 10 mm cuvette
Data interface	USB data transfer
Dimensions / weight	620 × 550 × 285 mm / approximately 45 kg
Wavelength scan speed	Up to 60,000 nm/min; 8 levels: 30, 60, 120, 240, 1,200, 2,400, 12,000 and 30,000 nm/min
Light source	50 W imported long-life xenon lamp, high-performance stabilized power supply and automatic deoxygenation design

Technical values are translated and consolidated from the supplied source PDF. Accessory and compliance-related functions should be confirmed against the final configuration.

Measurement and Data Functions

Measurement Functions

- Excitation-wavelength scan.
- Emission-wavelength scan.
- Synchronous scan.
- Fluorescence, luminescence and phosphorescence measurement.
- Three-dimensional fluorescence scanning.
- Time, intensity and spectral analysis.

Output and Communication

- USB data transfer.
- Data acquisition and spectral analysis through the instrument system.
- Access control, permissions, audit trail and electronic signatures are stated for regulated workflows.
- Optional 3Q service is stated in the source material.

Mechanical Dimensions / Installation

Instrument dimensions are 620 × 550 × 285 mm and weight is approximately 45 kg. Minimum sample volume is 0.5 mL using a standard 10 mm cuvette. The supplied source PDF does not include a separate wiring diagram or installation drawing; final installation should follow the selected accessory configuration and user manual.

Product Selection / Ordering Information

Selection	Configuration
Base model	SP 103Z – Fluorescence Spectrophotometer
Optional measurement accessories	Film and powder sample accessories, ultra-micro sample cell, semiconductor thermostatic sample cell and water-bath temperature-controlled colorimetric rack
Compliance-oriented options	3Q service stated as optional; FDA/GMP/GLP-oriented access-control functions stated in source

Specify SP 103Z together with the required measurement accessories and optional services. Final configuration is subject to the product order.

CONTACT / SUPPORT

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