Zeta™ UV Spectrophotometer

Applied Analytics Data Sheet No. DS-212A

The heart of an Applied Analytics system.

The Zeta Spectrophotometer is a core component of several Applied Analytics products. This device performs absorbance spectroscopy by transmitting a light signal across the path of a sample fluid via fiber optic cables.

The major sub-components of the Zeta include:

A. **The light source.** The Zeta Ultraviolet (UV) Spectrometer uses a pulsed xenon lamp.

B. **The slit.** This refers to the narrow aperture in the plate located at the focus of the spectrophotometer lens. It is exactly the size of one photodiode in the array, thus ensuring that each wavelength band is projected only onto the corresponding photodiode.

C. **The grating.** Physical separation (dispersion) of the received light signal and spectral imaging onto the diode array are both accomplished by the fused silica transmission grating, which is made up of very closely spaced parallel grooves. The angle in which the light is dispersed is proportional to the wavelength, such that each wavelength is differentiated and imaged onto a different point in the diode array.

D. **The photodiode array.** The linear array contains light-sensitive elements, each measuring an assigned wavelength; all the measurements occur in parallel such that the raw data comprises a complete spectral acquisition.

In a spectrophotometer, higher light transmittance provides more robust data. This was the guiding principle for designing the Zeta UV Spectrometer, which maximizes light throughput while eliminating traditional sources of noise (e.g. focusing mirrors).

Features

» Produces UV 190-435 nm absorbance spectrum in real time at 0.5 nm resolution

» Pulsed xenon light source with extremely stable performance and long lifespan (avg. 5 years)

» Transmission grating physically separates signal into constituent wavelengths for dispersive analysis

» Rugged, solid-state build — no moving parts or superfluous reflective elements

All performance specifications are subject to the assumption that the sample conditioning system and unit installation are approved by Applied Analytics. For any other arrangement, please inquire directly with Sales.

Subject to modifications. Specified product characteristics and technical data do not serve as guarantee declarations.

Technical Data	
Dispersive Method	Fused silica transmission grating
Spectral Range	190 nm to 435 nm
Resolution	0.5 nm
Dimensions	150 mm L X 57 mm W X 116 mm H
Connections	SMA-905 (optics), USB Type B (communication), Phoenix Contact MSTB 2 5/2-ST (power)
Operating Temperature Range	0 to 40 °C
Power Input	11-28 VDC

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