VENUSLAB
OPTOELECTRONICS

Precision
Meets
Simplicity

On-line Spectrometers

RamanOnline IoT Spectrometer

Molecular-Level Process Arbiter Under Extreme Operating Conditions

- Analytical Reliability Under Extreme Environments
- Real-Time Multi-Dimensional Process Analysis Capability
- Full-Process Compliance and Digital Integration
- Flexible Adaptation to Multi-Scenario Applications

One Platform Many Possibilities

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Overview

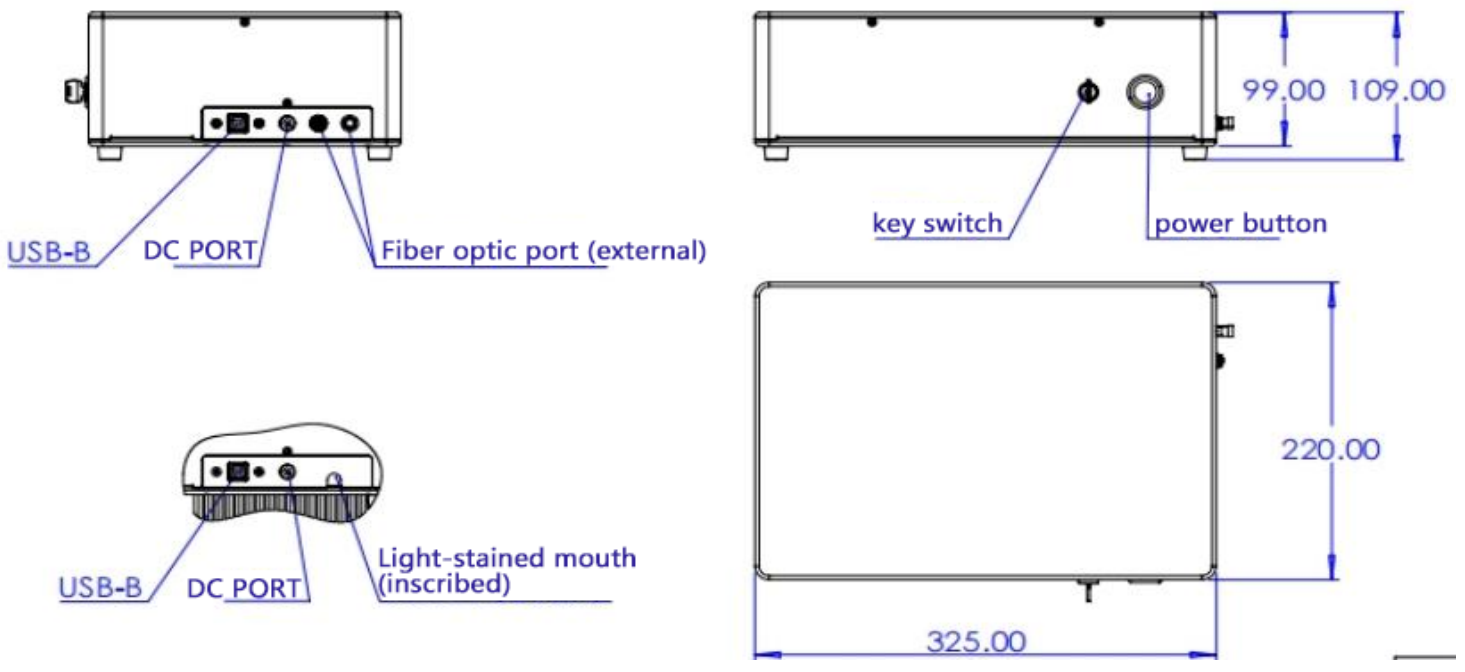
Introduction:

It is an online molecular spectroscopy analysis equipment designed specifically for extreme industrial environments. Its core function is to capture the molecular vibration fingerprint spectra of substances in real time through the Raman scattering effect, thereby realizing accurate monitoring of chemical components, structural changes and reaction progress during the production process.
Its technical characteristics can be summarized as "extreme environment adaptability + real-time molecular-level insight"

Features:

- Excellent performance: It has advantages such as high resolution and high sensitivity.
- Long-distance testing: It can be equipped with composite optical cables with a length of 1 - 100m to adapt to complex on-site detection scenarios.
- Powerful software: It is compatible with multiple operating systems and can perform data collection, analysis, comparison, and other tasks.
- Multi-channel detection: The Raman analyzer can support single-channel and multi-channel analysis and detection.
- High and low temperature resistance: The probe is suitable for -60 °C ~ +200 °C and is applicable to harsh working conditions of low and high temperatures.
- High pressure resistance: The probe can withstand a high pressure of 15 MPa and can monitor high-pressure reactions.
- Corrosion resistance: The probe is suitable for highly corrosive systems such as sulfuric acid, hydrochloric acid, nitric acid, and hydrogen fluoride.

Dimensions and Interface Description:



Specifications

Common Parameter Specification Table

Parameter	Specification
Laser Power	500mW
Spectral Resolution	~8cm-1 @ 25um
Integration Time	8ms - 30min
Detector Pixels	1024x58 pixels (customizable)
Detector Cooling	-25°C (minimum)
Laser Peak Wavelength	λc ± 0.5nm
Spectral Shift Error	≤3cm-1
Spectral Shift Repeatability	≤1cm-1
Laser Linewidth	≤0.08nm
Laser Power Stability	≤3% P-P (@2hrs)
Communication Interface	USB
Power Supply	5V 10A
Operating Temperature	0 - 40°C
Operating Humidity	5 - 80%

Explore Series

Model	VLRO-785
Spectrometer Input Interface	SMA905
Laser Output Interface	FC/PC
Dimensions	325 × 220 × 109 mm
Excitation Wavelength	785nm

📩 Get in touch with our team to explore configurations,request a quote,or learn more about customized solutions tailored to your needs.

Let us help you moves cience forward—faster ands marter.