NWH4000VNIR

Desktop Wide-Spectrum Hyperspectral Imaging Analyzer

Description

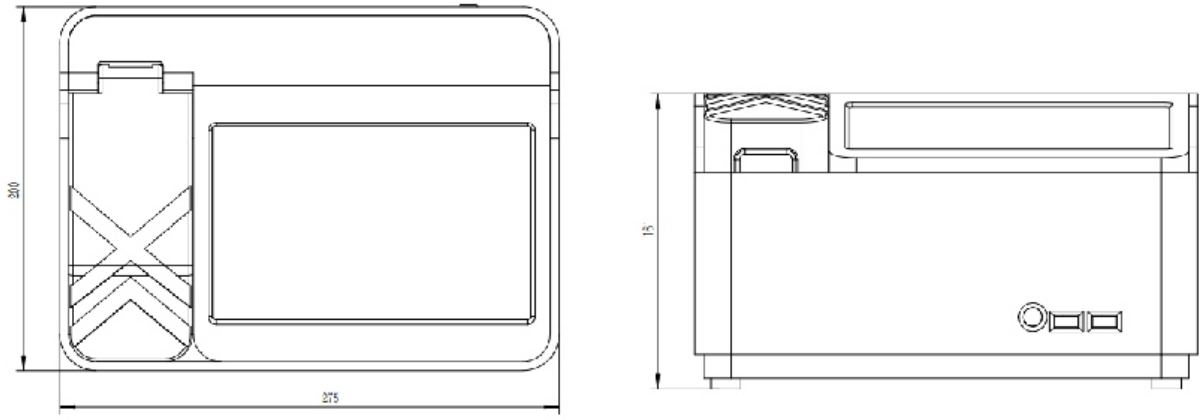
The NWH4000VNIR Desktop Wide-Spectrum Hyperspectral Imager is based on dispersive spectroscopy hyperspectral imaging technology, capable of measuring spectral ranges from 350 to 1700nm. It supports both transmission and reflection data collection modes.

Comprising a detection chamber and a touch screen interface, the system integrates a high-performance spectrometer, light source, and control computer. It offers rapid, precise, easy operation, and portability, making it ideal for a wide range of spectral detection applications to meet diverse user needs.

Specification

NWH4000VNIR Desktop Wide-Spectrum Hyperspectral Imager	
Spectral	Spectral Range: 350-1700nm
	Spectral Resolution: ≤2nm (350-900nm), ≤10nm (900-1700nm)
Light Source	Built-in Broadband Transmission and Reflection Light Source
Sample Dimensions	Diameter: ≤5cm Thickness: ≤8mm
Main Unit	Fully Capacitive Touch Display
	Built-in Storage Capacity: 512GB (supports up to 2TB)
Interfaces	USB 3.0 * 2
Electrical Parameters	Power Supply: AC 220V ~ 50Hz
	Maximum Power Consumption: ≤35W
Environmental Parameters	Operating Temperature: 0℃ ~ 50℃ Storage Temperature: -20℃ ~ 70℃
	Humidity: 20% ~ 95% RH (non-condensing)
Other	Dimensions: 275200161mm
	Weight: ~3kg

Dimension Figure



NWH4000VIS

Hyperspectral Imaging Colorimeter

Description

The NWH4000VIS Hyperspectral Colorimeter is based on advanced Hyperspectral Imaging Technology prism-grating dispersion hyperspectral imaging technology. It features a large color measurement area, simultaneous multi-color detection, high resolution, and excellent consistency.

Equipped with an advanced hyperspectral imaging spectrometer, a wide-spectrum uniform light source, and industry-leading color analysis software, the NWH4000VIS enables real-time color measurement and chromaticity difference identification over large surface areas and multiple color samples.

Leveraging cutting-edge hyperspectral technology, the NWH4000VIS Hyperspectral Colorimeter is widely applicable across various industries including textiles, aerospace, building materials, paints and coatings, automotive electronics, and spraying workshops, providing accurate and efficient color analysis solutions.

Advantages

Large Area Color Measurement

The NWH4000 can accurately perform color measurements over a 30cm x 20cm area, comparable to 347,600 traditional color meters. The entire measurement process takes less than one minute, enabling high-speed, efficient, and high-precision color detection over large regions.offering ultimate accuracy and reliability for end-users.

More Accurate Spectral Data

The NWH4000 features high-speed imaging capabilities, allowing it to instantly acquire comprehensive spectral information across the target area. This guarantees the authenticity and precision of spectral data for each pixel.

Precise Color Detection of Mottled Objects

Due to the complex overlap and tight arrangement of different-colored objects, traditional colorimeters face challenges in accurate measurement. The NWH4000, with its high spatial resolution, can effectively distinguish and analyze varied object colors, achieving color measurement accuracy up to 0.4mm.

Higher Consistency and Reproducibility

Utilizing advanced hyperspectral imaging technology, the system allows for digital color measurement, eliminating subjectivity during the color shading process. This ensures reliable high-precision results. Moreover, based on a robust quality management system, the system guarantees consistency across different devices and final measurement results, offering ultimate accuracy and reliability for end-users.

Application

Textile Industry Challenges

Over 50% of textiles lack the capability for color measurement, requiring manual inspection. This results in high labor costs, time consumption, and unreasonable expense.

Textile Industry

Including printing, weaving, dyeing, and other processes, as well as accessories like buttons, zippers, chains, and lace, and apparel such as jewelry and watches.

Manufacturing

Plastic panels and decorative panels.

Automotive Industry

Color measurement of plastic parts and automotive interior components.

Specification

NWH4000VIS Hyperspectral Imaging Colorimeter	
Color Measurement Parameters	Measurement Area: 20cm * 30cm
	Color Difference (ΔE*Lab): Resolution of 0.3
Hyperspectral Camera	Spectral Range: 400-780nm
	Spectral Resolution: 2nm
	Spatial Resolution: 0.44mm
	Data Bit Depth: 12bit
Light Source	Broadband Light Source
Processing Platform	14-core Processor , 3.7/5.0GHz , 20 Threads
	PCIe 4.0 SSD, 2TB
	Fully Capacitive Touch Display
Interfaces	USB 3.0 * 2
	1000Mbps LAN * 1
Electrical Parameters	Power Supply: AC 220V ~ 50Hz
	Maximum Power Consumption: 650W
Environmental Parameters	Operating Temperature: 0℃ ~ 50℃ , Storage Temperature: -20℃ ~ 70℃
	Humidity: 20% ~ 95% RH (non-condensing)
Others	Built-in Motor Battery, Supports One-Button Closing of the Chamber
	Weight: ~23kg

Dimension Figure