# 400-2500nm

# Laboratory Hyperspectral Imager

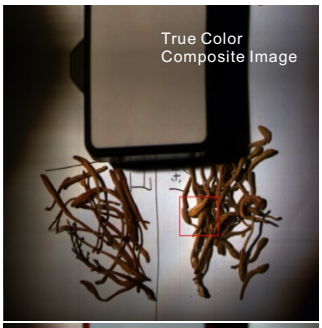
## Product Overview

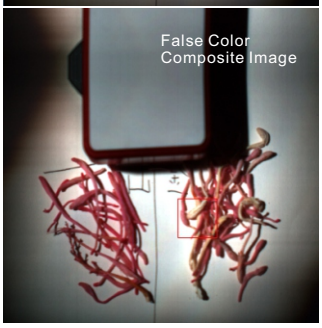
The NWH8000 Series Laboratory Hyperspectral Imager is a high-performance instrument specifically engineered for laboratory applications. Its core dispersive spectral module is independently developed by Hangzhou Hyperspectral and supports a wide range of optional imaging sensors. When paired with ultra-high-resolution cameras, it achieves the perfect balance of high spatial resolution and high spectral fidelity.

For enhanced precision, the system can be configured with our proprietary linear light source and specially designed darkroom enclosure, minimizing environmental interference during sample testing. Combined with our unique spatio-temporal radiometric calibration technology, the NWH8000 Series delivers stable, standardized hyperspectral data ideally suited for advanced scientific analysis.

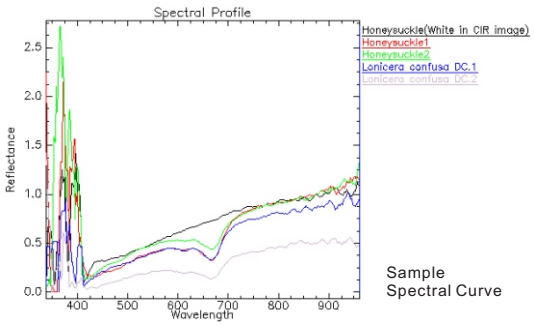
## Application Fields

- **Forensic Science & Document Examination:**
  Evidence, seals, signatures, alterations, inks, printed materials, certificates, fingerprints.
- **Food & Agriculture:**
  Fruits, vegetables, meat, grains, tea leaves.
- **Material Sorting:**
  Tobacco, pharmaceuticals.
- **Authentication & Verification:**
  Cultural relic identification, gemstone and jewelry analysis.

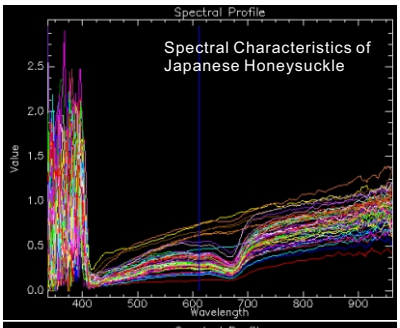


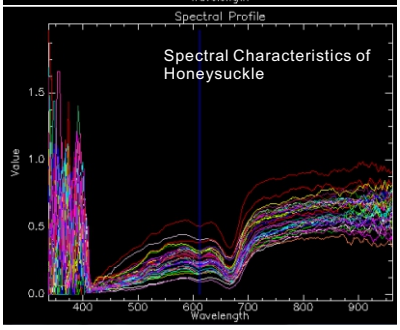




Hyperspectral imaging technology is non-destructive, rapid, and environmentally friendly, enabling efficient quality inspection and identification of traditional medicinal materials such as honeysuckle and mountain honeysuckle.




Sample
Spectral Curve




## Key Features & Advantages

- High-Performance Camera System – Equipped with large-aperture, high light-gathering optics, supporting advanced CMOS sensors and optional high-end CCD sensors.
- Uniform Illumination – Wide, homogeneous line or beam light source matched to the camera field of view ensures full dataset coverage.
- Precision Calibration – Supports both spectral and spatial calibration for enhanced measurement accuracy.
- High-Resolution Hyperspectral Imaging – Captures detailed spatial images combined with rich spectral data for comprehensive multi-dimensional analysis.
- Rapid Scanning & Data Management – Enables fast acquisition of large datasets with convenient storage and processing.
- Autofocus Function – Automatically adjusts focus based on sample thickness, ensuring consistently sharp images.
- Real-Time Processing – Provides real-time collection, analysis, and storage of hyperspectral data.
- Standardized, Stable Data – Generates calibrated hyperspectral datasets optimized for precise scientific research.
- Adaptive Autofocus & Elevation Adjustment – Maintains clarity across varying sample thicknesses.
- Time-Based Spectral Optimization – Automatically suggests acquisition times based on sample reflectance, improving spectral quality.
- Software Compatibility – Fully compatible with third-party analysis software such as ENVI.

## Specification

| NWH8000 Series Laboratory Hyperspectral Imager | | | | | | |
|---|---|---|---|---|---|---|
| **Name** | **Specification** | **NWH8000-VNIR-U** | **NWH8000-VNIR-S** | **NWH8000-NIR-U** | **NWH8000-NIR-S** | **NWH8000-SWIR-U** |
| Hyperspectral Camera | Spectral Range | 400-1000nm | | 900-1700nm | | 1000-2500nm |
| | Spectral Resolution | ≤2.5nm | ≤2.3nm | ≤4nm | ≤4nm | ≤8nm |
| | Spectral Channels | 300 | 270 | 256 | 512 | 256 |
| | Spatial Channels | 480 | 480 | 320 | 640 | 320 |
| Detector | Detector | CCD | | InGaAs (TE Cooled) | | HgCdTe |
| | Detector Interface | GigE | | GigE | CameraLink | CameraLink |
| | Frame Rate | 128fps | 80fps | 300fps | 300fps | 340fps |
| Lens | FocalLength(optional) | 8mm/12mm/25mm/35mm/50mm | | 8mm/12mm/25mm/35mm/50mm | | 25mm |
| High-Definition Camera | Pixel | 5 MP | 24 MP | 5 MP | 24 MP | 40 MP |
| Light Source | Full Spectrum | High-Energy Line Light Source | | High-Energy Line Light Source | | High-Energy Line Light Source |
| Other | Enclosure | Standard Test Bench | Lightproof Darkroom | Lightproof Darkroom | | |
| | Scanning Area | 200*300mm | | 200*300mm | | 200*300mm |
| | Sample Thickness 0-100mm | 0-100mm | | 0-100mm | | 0-100mm |