

DUAL ACQUISITION OPTIONS

VNIR-NIR

- Includes the perClass Stage and Software
- Wavelengths from 400 - 1700 nm
- More capabilities
- Faster models for assessment, screening, research, and rapid development



VNIR-SWIR

- Includes the perClass Stage and Software
- Full range of spectral data, from 400 - 2500 nm
- More capabilities
- Faster models for assessment, screening, research, and rapid development
- The best solution for a lab that is solving multiple problems



Scan to view online!

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Headwall is the proud recipient of these honors and more...



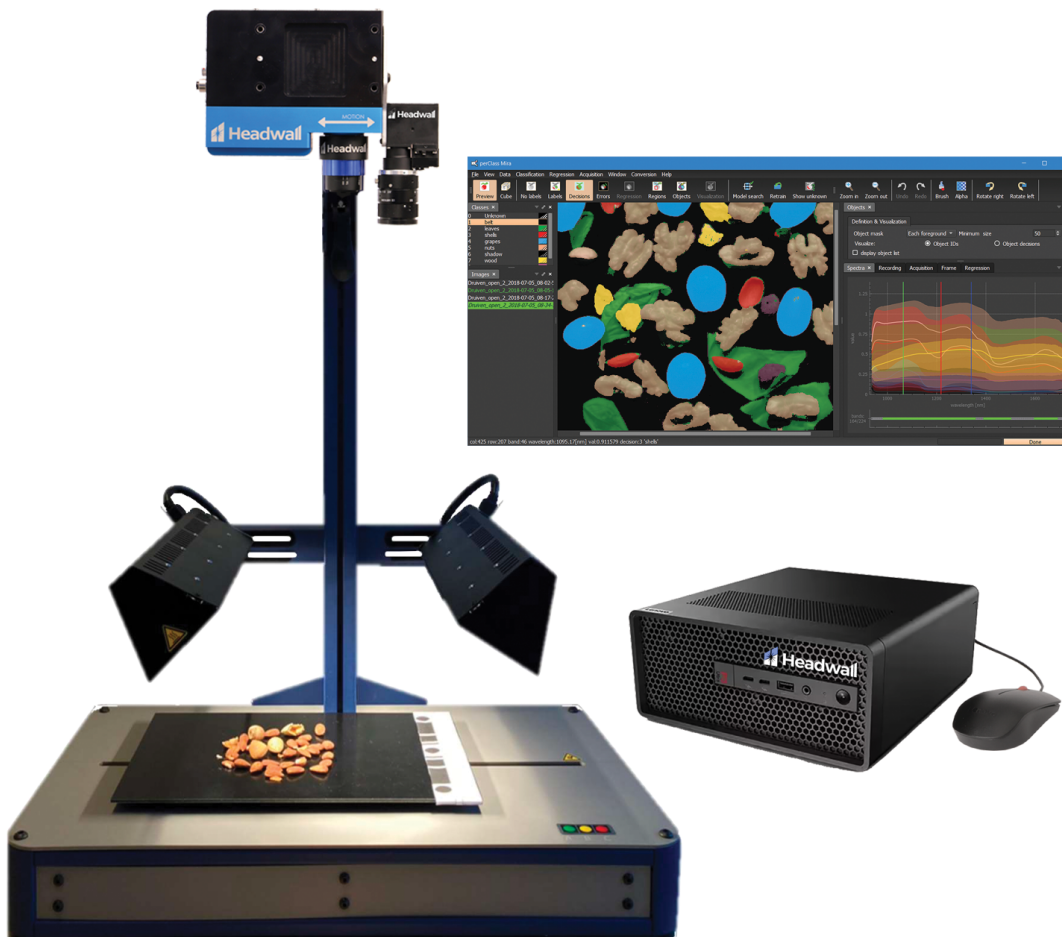
MV.Scan

Packages with everything you need for hyperspectral imaging

FEATURES

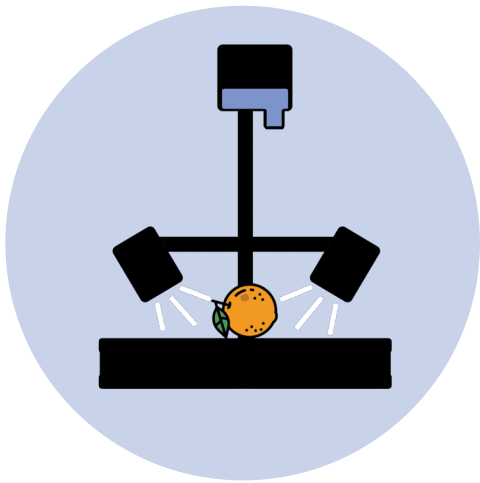
- At lab, at line, at scale!
- Complete out of the box solution
- Versatile, robust, and portable
- VNIR, NIR, and SWIR configurations
- Highly efficient data acquisition

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erate, and succeed!



Does not include monitor.

YOUR COMPLETE HYPERSPPECTRAL SOLUTION



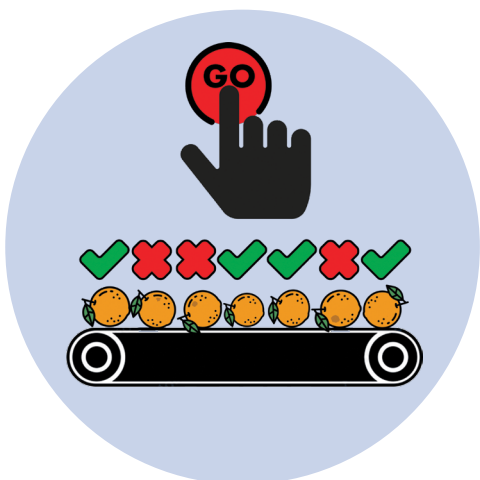
COLLECT

- Highly efficient, single-button data acquisition
- Dual-camera acquisition supported
- Data compression



TRAIN

- Data visualization/classification/regression analysis
- Object segmentation
- Easily define training and test data



DEPLOY

- Simple operator mode
- Real-time results
- Adaptable for many applications
- Perfect tool for quality and process analysis

MV.SCAN PACKAGES Everything You Need for Hyperspectral Imaging

Headwall's **MV.Scan** packages are pre-configured and tested systems with the sensor, illumination, mounts, sample stage, and software for automated operation suitable for both researcher and technician. On the **perClass Mira Scanning Stage**, a sample tray sits atop a solidly built but lightweight and portable stage with mounts for a variety of Headwall hyperspectral sensors covering the VNIR, NIR, and SWIR wavelength ranges.

These Headwall hyperspectral sensors accept C-mount lenses (sold separately) appropriate for their wavelength range in several focal lengths. A compact, powerful, pre-configured **MV.PC** is strongly recommended, and runs **perClass Mira® Software**, the industry standard for intuitive capture and interpretation of hyperspectral imaging data.

MV.Scan packages are suitable for benchtop use and fit into check-in travel cases so that they can go where they are needed. Perform quick product checks right next to busy production lines, or fine-tune spectral classification models that run in real time on the line. Setup can be done in just a few minutes from unpacking and attaching the hyperspectral sensor, to clicking the scan button, to model development, and then running in real time.

MV.Scan packages are contact-free and non-destructive, and can be used for all different types of applications, including food, plastics, recycling, textiles, pharmaceuticals, electronics, and anything else that can fit onto the tray. Place a sample on the tray under the broadband QTH lights, focus the lens, click in the software, and within seconds your scan is complete. One scanning stage can support multiple sensors, such as an **MV.C VNIR** and **MV.C NIR** for data from 400 to 1000nm and 900 to 1700nm.

The included **perClass Mira Software** enables even non-domain experts to rapidly build solutions for automatic segmentation of hyperspectral images.



The perClass Mira Software controls all acquisition hardware, provides an intuitive analysis interface, and enables model deployment with visual feedback—no switching between acquisition, analysis, and deployment interfaces.

The system can be configured to shorten repetitive feasibility studies where the user can simply place a sample on the stage, click a button, then replace the sample and click again. No exact placement is required, no parameters need to be re-entered, and no reset switch needs to be used.

EASY TO USE • EASY TO SUCCEED
Contact us to discuss your application!

MV.SCAN SPECIFICATIONS



| SPECIFICATIONS | VNIR | | |
|-----------------------------------|---------------|---------------|---------------|
| Spectrometer¹ | MV.C VNIR | MV.X VNIR | VNIR E-Series |
| Wavelength Range | 400 – 1000 nm | 400 – 1000 nm | 400 – 1000 nm |
| Camera Technology | CMOS | CMOS | sCMOS |
| Spatial Pixels | 1024 | 1024 | 1600 |
| Spectral Bands² | 301 | 301 | 369 |
| Digital Interface(s) | USB 3.1 | Dual GigE | USB 3.0 |

| perClass Mira Software | |
|------------------------------|---|
| Data Acquisition | Stage and spectrometer control; exposure, square pixel, and focus wizards |
| Data Preprocessing | Smoothing, 1st and 2nd derivative |
| Data Analysis | Classification, object segmentation, regression, feature extraction, spectral indices |
| Analysis Verification | Confusion matrix, cross validation, regression statistics |
| User Modes | Developer, Operator |
| Data Export | ENVI, Excel™, MatLab™, XML, PNG |

| perClass Mira Stage | |
|---|---|
| Sample Plate | 400 x 250 mm |
| Max. Sample Weight | 2 kg (4.4lbs) |
| Illumination | 2 Halogen banks (100 W each) |
| Control | 3 Programmable buttons on stage, perClass Mira Developer Software |
| Scan Speed (min/max)³ | 10 mm/s - 70 mm/s |
| Dimensions Travel Case | 700 x 432 x 761 mm |
| Dimensions / Weight Stage + Case | 780 x 493 x 284 mm / 27 kg (60 lbs) |

MV.SCAN PACKAGES

Everything You Need for Hyperspectral Imaging



| NIR | | SWIR | VNIR+NIR | VNIR+SWIR |
|---------------|---------------|-------------------|----------------------------------|----------------------------------|
| MVC NIR | RedEye | SWIR 640 | VNIR-NIR | VNIR-SWIR |
| 900 – 1700 nm | 950 - 1700 nm | 900 – 2500 nm | 400 – 1000 nm / 900 – 1700 nm | 400 – 1000 nm / 900 – 2500 nm |
| InGaAs | InGaAs | MCT | CMOS / InGaAs | CMOS / MCT |
| 640 | 320 | 640 | 1024 / 640 | 1024 / 640 |
| 201 | 256 | 267 | 301 / 201 | 301 / 267 |
| GigE Vision | GigE Vision | Camera Link® Base | USB 3.1 / GigE Vision | USB 3.1 / Camera Link® Base |

| MV.PC ⁴ | |
|-----------------------------|--|
| OS | Windows 11 Pro 64 |
| Processor / Graphics | Intel Core i7 / NVIDIA RTX A2000 12 GB |
| RAM | 64 GB |
| Storage | 1 TB M.2 SSD (OS) + 4 TB M.2 SSD (data storage) |
| Interfaces | Dual Ethernet™ (1 x 1 Gbps, 1 x 2.5 Gbps), 2 x Thunderbolt™ 4 (USB-C, 40 Gbps) 5 x USB-A 3.2 Gen 2 (10 Gbps) |
| Optional Interfaces | Camera Link® Base (PCIe board) |

¹ For more detailed specifications, please refer to respective spectrometer datasheets on Headwall's website

² With standard resampling

³ Contact us for slower-speed options

⁴ PC specifications are subject to change without notification.