VC-10-U

Video Hyperspectral Camera

Snapshot video-rate hyperspectral imaging from 450–900 nm — no moving parts, real-time “what you see is what you measure.”



36 fps	75	3188×1739	0
spectral video rate	spectral bands	effective focal plane	moving parts

VC-10-U — VIDEO HYPERSPECTRAL CAMERA · 423-367

01
VIDEO-RATE DATACUBE
75 spectral bands at 36 fps — full hyperspectral cubes of moving scenes, no scanning, no motion distortion.

02
NO MOVING PARTS
Solid-state snapshot architecture: UAV-borne, vehicle-mounted, fixed-watch or benchtop laboratory deployment.

03
SPECTRUM PER PIXEL
520 spectral sampling points per pixel, 2.5–18 nm resolution, 3188 × 1739 effective focal plane.

04
ONE CAMERA, MANY PLATFORMS
Industrial QC, eco-environment monitoring, smart agriculture, power and security inspection with one head.

KEY ADVANTAGES

- Breaks the wall between 2-D cameras and static spectrometers — live video plus per-pixel continuous spectrum
- Visible-to-NIR 450–900 nm coverage with interchangeable 8 / 16 / 35 / 50 mm lenses from wide survey to close inspection
- Snapshot design eliminates moving scan parts — survives vibration on vehicles, drones and production machinery
- Surface defects, contaminants, authenticity and color-difference checks for PV, new materials, food and textiles
- Captures dynamic processes in real time: conveyor lines, flowing water, drone overflights, patrol routes
- Image-spectrum fusion: visual monitoring and material identification in one integrated perception solution
- Deployable as UAV payload, vehicle mount, fixed station or laboratory benchtop within minutes
- Vegetation stress early warning, water eutrophication and camouflage / anomaly screening in the same frame

SYSTEM OVERVIEW

NWSPEC

SNAPSHOT SENSOR
3188 × 1739 effective focal plane (11 × 6 mm) captures image and spectrum simultaneously — no slit scanning.

75-BAND DATACUBE
75 spectral bands with 520 sampling points rebuilt at up to 36 fps for live spectral video.

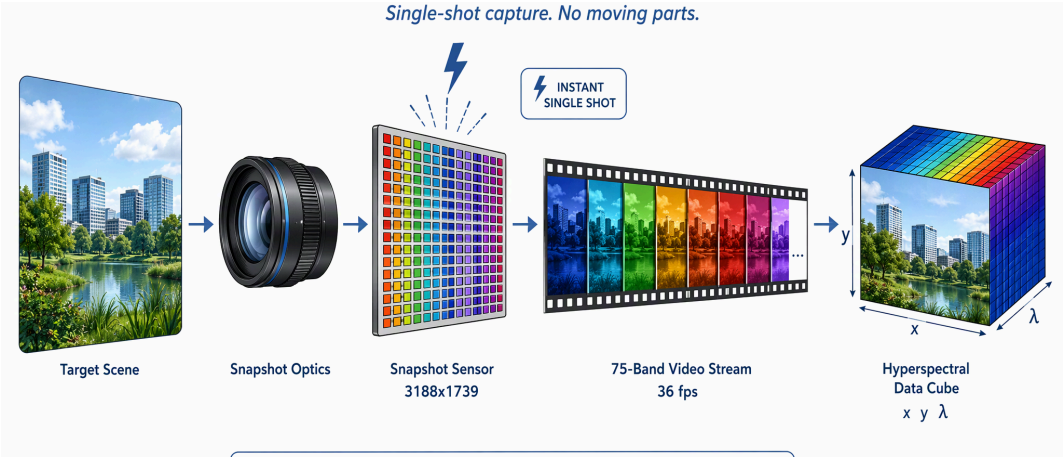
INTERCHANGEABLE LENSES
8 / 16 / 35 / 50 mm lens set: spatial sampling from 37 down to 6 mrad, IFOV 1.2 → 0.2 mrad.

SOLID-STATE RELIABILITY
Zero moving parts — vibration-tolerant for UAV, vehicle and industrial robot mounting.

MULTI-SCENE DEPLOYMENT
Airborne, mobile, fixed-watch or benchtop — the same head covers patrol and laboratory work.

IMAGE-SPECTRUM FUSION
Maps material identification results directly onto the live video display for operator-friendly alerts.

HOW IT WORKS



The snapshot sensor acquires the scene without scanning; each pixel's 450–900 nm spectrum is rebuilt into a 75-band datacube at 36 fps — video and spectroscopy in one frame.

APPLICATION AREAS

INDUSTRIAL VISION INSPECTION
Surface defects, surface impurities, authenticity and color-difference checks for PV, materials, food and textiles.

Configured with: VC-10-U — 35/50 mm close-inspection lens on line

ECO-ENVIRONMENT MONITORING
Water eutrophication, outfall patrol, suspended matter and vegetation-stress dynamic surveys.

Configured with: VC-10-U — 8 mm wide-FOV lens, fixed station

SMART AGRICULTURE & FORESTRY
Crop vigor assessment, early pest-stress warning, vegetation classification and soil-organic-matter evaluation.

Configured with: VC-10-U — UAV-borne 8/16 mm lens

POWER & SECURITY INSPECTION
PV plant component defects, tower appearance hazards, camouflage-target and abnormal-material screening.

Configured with: VC-10-U — vehicle / fixed-watch 35 mm lens

TECHNICAL SPECIFICATIONS

NWSPEC

Model	VC-10-U (part no. 423-367)
Spectral range	450–900 nm
Spectral resolution	2.5–18 nm
Spectral sampling points	520 channels
Spectral bands	75
Frame rate	36 fps
Effective focal plane	11 × 6 mm (3188 × 1739)
Lens options / spatial sampling	8 mm: 37 mrad · 16 mm: 19 mrad · 35 mm: 9 mrad · 50 mm: 6 mrad
IFOV	1.2 / 0.6 / 0.3 / 0.2 mrad (8 / 16 / 35 / 50 mm)
Scanning	None — snapshot, no moving parts
Deployment	UAV-borne / vehicle-mounted / fixed-watch / benchtop