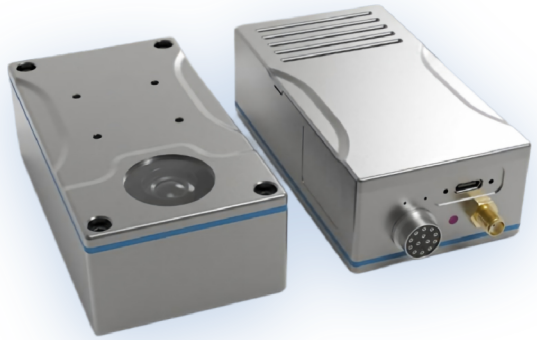
MS-10 Series

Snapshot Multispectral Camera

MEMS-FP true physical spectrum across 400–950 nm — no spectral reconstruction, no temperature compensation.



56	60°	200:1	235 g
spectral channels (–03)	horizontal field of view	spectral SNR	lightest variant

MS-10-01 · MS-10-02 · MS-10-03 — VIS-NIR MULTISPECTRAL CAMERA

01
TRUE PHYSICAL SPECTRUM

400–950 nm real measured spectrum per pixel — no computational reconstruction, data you can trust.

02
STABLE & REPEATABLE

Repeat measurements stay consistent run after run — no temperature-drift compensation needed.

03
STEEPLESS TUNING

MEMS continuously tunable filter: 20 nm FWHM, 10 nm step, bands configured flexibly for each task.

04
COMPACT WIDE VIEW

235 g snapshot area-array camera with 60° horizontal FOV — wide coverage in one glance, easy line integration.

KEY ADVANTAGES

- Snapshot staring imaging: no scanning stage, no motion blur — area-array detection at video rate
- High spatial resolution 1280 × 1024 CMOS with 30 fps preview for efficient on-line inspection
- Resolves subtle color differences the human eye cannot separate — precise grading and defect screening
- Color check, food sorting, vegetation monitoring, material defect detection, bio-sample analysis with one camera
- USB2.0 / WiFi output, 5 V supply at only 2.5 W — simple wiring on existing lines and platforms
- SDK and acquisition software for Windows / Linux; USB2.0 Vision protocol for direct platform integration
- Three factory band configurations — visible, near-infrared, or full 400–950 nm — matched to your material
- IP40 enclosure, −10 °C to +50 °C operation for workshop and field deployment

SYSTEM OVERVIEW

MEMS-FP TUNABLE FILTER

Solid-state Fabry-Perot cavity with MEMS actuator — wavelength set electrically, no moving parts, instant band switching.

AREA-ARRAY CMOS SENSOR

1280 × 1024 high-resolution sensor images the full scene at once; preview at 30 fps for real-time alignment.

56 SPECTRAL CHANNELS

Up to 56 bands across 400–950 nm with 200:1 spectral SNR and 40 dB image SNR.

WIDE-ANGLE LENS

2.9 mm F2.9 fixed lens: 60° × 50° FOV (74° diagonal), M12 mount, 150 mm default working distance.

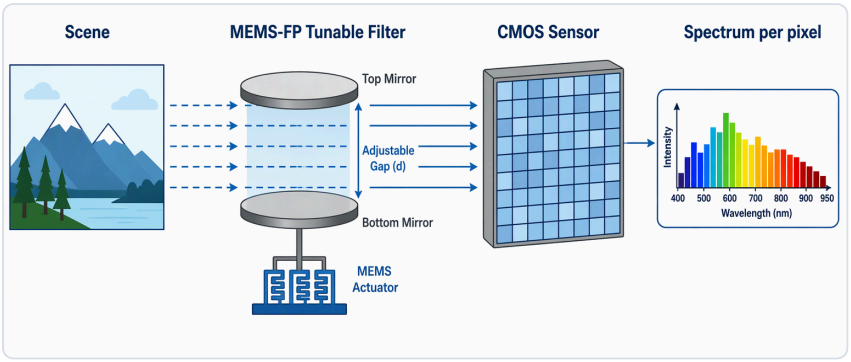
LOW-POWER DESIGN

5 V supply, 2.5 W typical — powered from a USB port or small battery pack in the field.

SOFTWARE & PROTOCOL

Free SDK and acquisition software; USB2.0 Vision and USB RNDIS standards supported.

HOW IT WORKS



Scene light passes the MEMS-FP tunable filter — every pixel records a true physical spectrum from 400 to 950 nm.

APPLICATION AREAS

COLOR DETECTION & GRADING

Separate subtle color differences the human eye cannot resolve for material color grading and shade-defect identification.

Configured with: MS-10-01 — 400–700 nm visible configuration

FOOD QUALITY SORTING

Detect mildew, damage, foreign matter and grade non-destructively from spectral signatures.

Configured with: MS-10-01 / MS-10-03 — visible or full-range

AGRICULTURE & VEGETATION

Judge crop vigor, pest stress and water-fertilizer condition for non-destructive field monitoring.

Configured with: MS-10-02 / MS-10-03 — NIR sensitivity

MATERIAL & DEFECT ANALYSIS

Identify material classes; find scratches, hidden damage and composition anomalies by spectral difference.

Configured with: MS-10-03 — full 400–950 nm range

BIO-INFORMATION ANALYSIS

Capture sample spectral features for composition discrimination and status analysis of biological specimens.

Configured with: MS-10-03 — full-range, laboratory setup

INLINE MACHINE INTEGRATION

Mount on production lines and inspection platforms at only 235 g with SDK support.

Configured with: any MS-10 variant — SDK + USB2.0 Vision

TECHNICAL SPECIFICATIONS

Model	MS-10-01 / MS-10-02 / MS-10-03
Spectral range	400–700 nm / 650–900 nm / 400–950 nm
Spectral channels	31 / 26 / 56
Imaging method	Staring (snapshot) imaging, CMOS sensor
FWHM / tuning step	20 nm / 10 nm
Spectral SNR / image SNR	200:1 / 40 dB
Spatial resolution	1280 × 1024, 10-bit dynamic range
Preview frame rate	30 fps
Working distance	150 mm default
Lens	2.9 mm, F2.9, FOV H 60° / V 50° / D 74°, M12 mount, fixed focus
Interface / power	USB2.0 / WiFi; 5 V, 2.5 W typical
Weight / size	235 g / 235 g / 298 g; 112 × 56 × 34 mm (–01/–02), 119 × 60 × 38 mm (–03)
Environment	IP40; −10 °C to +50 °C operating, −20 °C to +70 °C storage, 5–90% RH
Software	SDK + acquisition software; Windows / Linux; USB2.0 Vision, USB RNDIS