RM-10-F Series

Hyperspectral Fluorescence Microscopy

Intelligent high-speed hyperspectral fluorescence imaging — the full spectrum of every pixel, without filter limits or crosstalk.



RM-10-FM · RM-10-FX — HYPERSPECTRAL FLUORESCENCE MICROSCOPE

01
FULL-SPECTRUM FLUORESCENCE

400–1000 nm imaging with better than 2.3 nm resolution captures every pixel's complete fluorescence spectrum — no filter or channel limits, no crosstalk.

02
PRECISE SPECTRAL UNMIXING

Separates spectrally overlapping labels from tissue autofluorescence; supports multi-component unmixing and label-free endogenous fluorescence detection.

03
VIRTUAL CHANNEL RECONSTRUCTION

Rebuild any channel from the full spectral data cube for quantitative fluorescence analysis — no repeated experiments, flexible views anytime.

04
HIGH SPEED & SENSITIVITY

72 fps full-spectrum frame rate with ≥ 300 bands and 512 spatial pixels on a TE-cooled 16-bit sCMOS detector — fast, quantitative, reproducible.

KEY ADVANTAGES

- 400–1000 nm full-band imaging, spectral resolution better than 2.3 nm at F/2.4
- Image and spectrum in one: 2D morphology plus per-pixel spectral signatures — see the form, identify the substance
- 7-channel fluorescence illumination with 6-position reflectance fluorescence illuminator and 12 V/100 W transmission halogen lamp
- Two configurations on one platform: RM-10-FM standard and RM-10-FX automated
- RM-10-FX adds a 120-slide smart sample chamber, intelligent auto loading and auto focus, motorized channel switching, and RGB + grayscale assist cameras
- Research-grade optics: infinity-corrected system, plan-apochromatic objectives up to 60×, better than 1 μm spatial resolution
- Built for complex biological samples — cells, organoids and tissue sections; multi-target imaging on the same slide
- ≥ 300 spectral bands, 512 spatial pixels, 72 fps full-spectrum frame rate, 16-bit TE-cooled sCMOS

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RM-10-F Series

Hyperspectral Fluorescence Microscopy — System & Technology

SYSTEM OVERVIEW

VNIR HYPERSPECTRAL CAMERA

400–1000 nm coverage with spectral resolution better than 2.3 nm at F/2.4; ≥ 300 bands and 72 fps full-spectrum frame rate.

TE-COOLED sCMOS DETECTOR

16-bit dynamic range with 512 spatial pixels and recommended 4×4 binning for high-sensitivity, low-noise spectral cubes.

RESEARCH-GRADE MICROSCOPE

Infinity-corrected upright optics with plan-apochromatic objectives up to 60× and better than 1 μm spatial resolution.

7-CHANNEL FLUORESCENCE

6-position reflectance fluorescence illuminator with motorized switching on the FX; 12 V/100 W halogen transmission illumination.

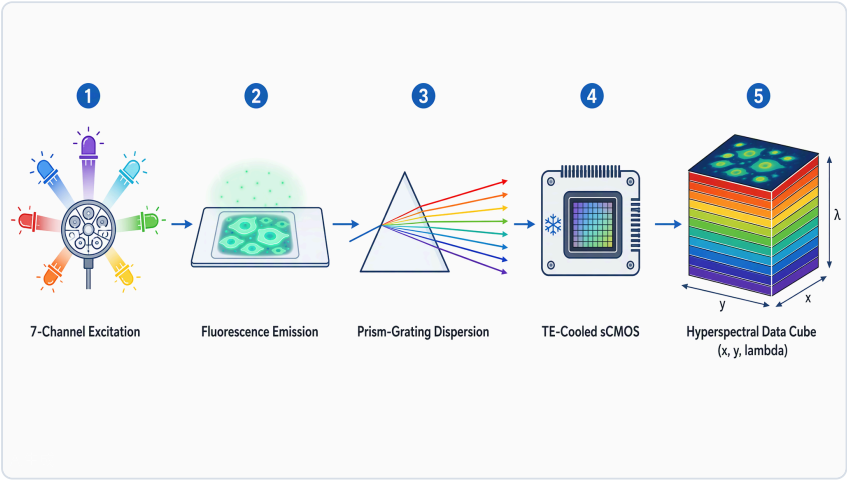
SMART AUTOMATION (RM-10-FX)

120-slide smart sample chamber, intelligent auto loading, automatic focus, and RGB + grayscale cameras for positioning and focus assist.

UNMIXING & VIRTUAL CHANNELS

Full-spectrum data supports spectral unmixing, multi-target separation and arbitrary virtual channel reconstruction.

HOW IT WORKS



Multi-channel excitation makes the sample fluoresce; prism-grating dispersion resolves the full spectrum of every pixel on the TE-cooled sCMOS, building a hyperspectral data cube for unmixing and virtual-channel analysis.

APPLICATION AREAS

PATHOLOGY & ONCOLOGY

Separate tumor from normal tissue by spectral difference; delineate tumor margins and infiltration; multi-target detection on the same slide with autofluorescence separation.

Configured with: RM-10-FX — 120-slide auto scan, 7-channel motorized

CELL & NEUROSCIENCE

Capture fluorescence spectra and high-resolution spatial images at single-cell level; distinguish autofluorescence from labels; track organelles and neural circuits.

Configured with: RM-10-FM or RM-10-FX

ORGANOID & 3D CULTURE

Multi-marker imaging and micro-environment analysis of organoid three-dimensional cultures with per-pixel spectral quantification.

Configured with: RM-10-FX — auto focus & large-batch scanning

MATERIALS SCIENCE

Micro-area spectral analysis of semiconductors, nanomaterials and polymers — defect detection, composition distribution and interface characterization.

Configured with: RM-10-FM — high-resolution visible microscopy

DRUG DEVELOPMENT

Tissue morphology inspection, pathology research and drug-efficacy studies supported by quantitative spectral data.

Configured with: RM-10-FX — high-throughput slide screening

MICRO-ENVIRONMENT ANALYSIS

Label-free endogenous fluorescence detection and multi-component unmixing for complex heterogeneous samples.

Configured with: RM-10-FM or RM-10-FX

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RM-10-F Series

Hyperspectral Fluorescence Microscopy — Specifications & Configurations

TECHNICAL SPECIFICATIONS

Model	RM-10-FM / RM-10-FX
Product type	Intelligent high-speed hyperspectral fluorescence microscopy imaging analysis system
Spectral range	400–1000 nm
Spectral resolution	Better than 2.3 nm (F/2.4)
Detector	TE-cooled sCMOS, 16-bit; 512 spatial pixels (4×4 binning recommended); ≥ 300 bands
Full-spectrum frame rate	72 fps
Spatial resolution	Better than 1 μm
Microscope	Upright biological | Research-grade upright fluorescence
Field number	F.N 23 / 25 / 26.5 optional | F.N 25 / 26.5
Objectives	Plan-achromatic 4×/10×/20×/40×/50× | Plan-apochromatic 4×/10×/20×/40×/60×
Stage	118 × 76 mm, 4-slide holder | > 120 × 70 mm, 4-slide holder
Assist cameras	— | RGB 1920×1280 (area positioning) + grayscale 1920×1200 (focus assist)
Focus	Manual | Intelligent automatic
Smart sample chamber	— | 120 slides, intelligent auto loading

PERFORMANCE HIGHLIGHTS

< 2.3 nm
Spectral resolution at F/2.4

72 fps
Full-spectrum frame rate

≥ 300 bands
400–1000 nm, 512 spatial pixels

< 1 μm
Spatial resolution

TWO CONFIGURATIONS, ONE PLATFORM — CHOOSE YOUR WORKFLOW

RM-10-FM STANDARD CONFIGURATION

- Upright biological microscope, plan-achromatic objectives to 50×
- Manual focus and 7-channel manual switching
- F.N 23 / 25 / 26.5 optional; 4-slide holder
- For research labs and routine multi-target imaging

RM-10-FX AUTOMATED CONFIGURATION

- Research-grade fluorescence microscope, plan-apochromatic objectives to 60×
- 120-slide smart chamber, auto loading, intelligent auto focus
- Motorized 7-channel switching; RGB + grayscale assist cameras
- For high-throughput pathology, screening and drug development

Tell us your samples and throughput. Both configurations share the same 400–1000 nm hyperspectral core — we match objectives, channels and automation to your application before delivery.

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