



CONFOCAL LASER SCANNING MICROSCOPE

QualiCM-60L

Confocal Laser Scanning Microscope

QualiCM-60L

The QualiCM-60L is a **high-performance confocal laser scanning microscope designed for advanced fluorescence imaging and multi-dimensional analysis**. It features multi-wavelength laser compatibility, high-sensitivity GaAsP detectors, and precision motorized controls—delivering exceptional resolution, speed, and accuracy for demanding research environments.

Its user-friendly software supports 5D imaging, 3D reconstruction, co-localization analysis, and advanced image processing, making it a powerful tool for life sciences, materials science, and biomedical applications.

The system includes a 7-inch capacitive touchscreen with enhanced LED backlighting for sharp visibility. The interface provides real-time status updates, control over imaging modes, and intuitive access to system components. A single multi-function button and memory-based mode switching streamline workflow and improve operational efficiency.



FEATURES/ADVANTAGES

Integrated Controls

Integrated electronic controls retain traditional coarse and fine focus adjustment while eliminating gearsets, providing both manual and automatic operation for precise handling and easy usability.

Modular System

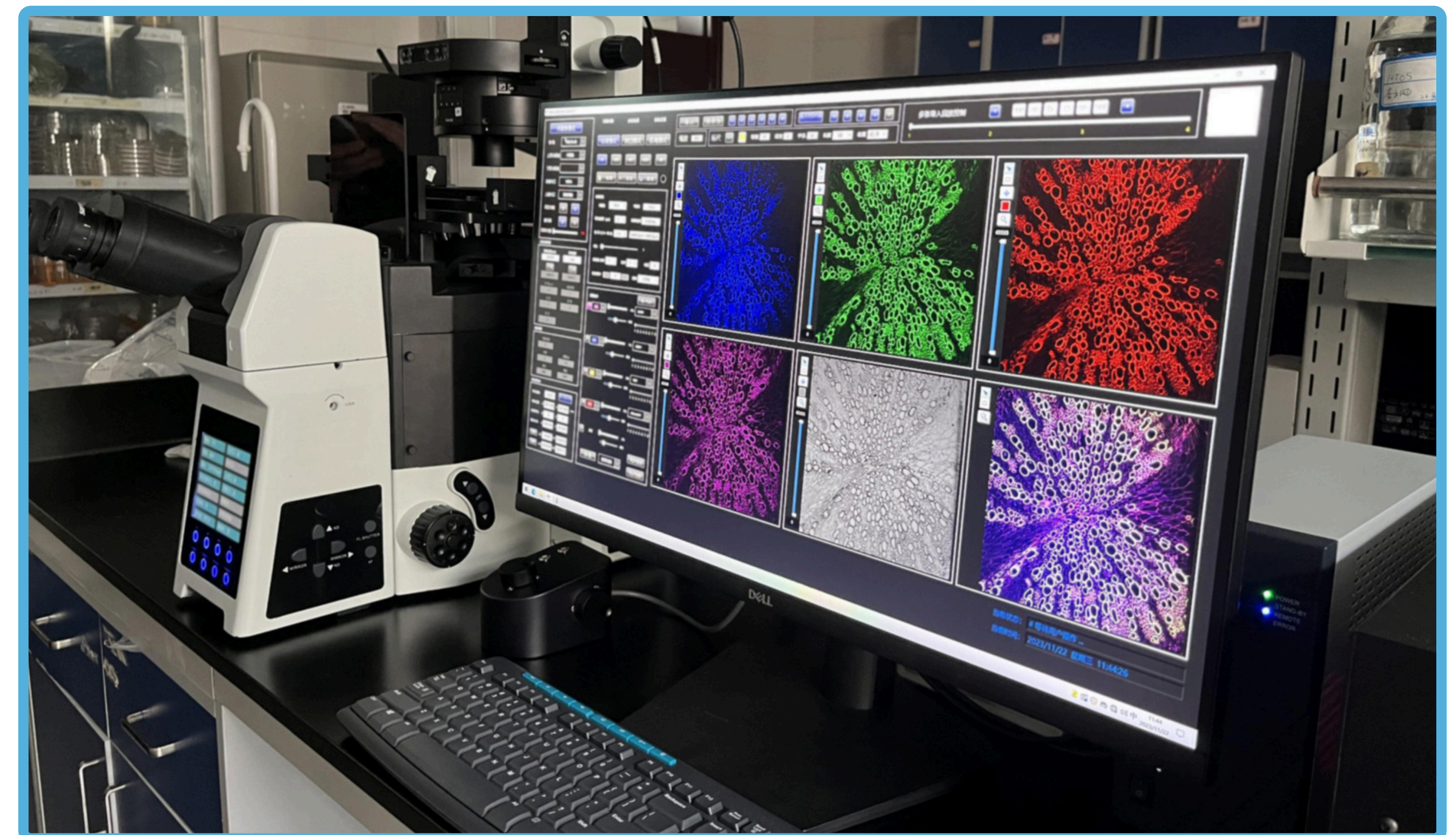
A flexible illumination system allows switching between single-layer and dual-layer lighting configurations, supporting diverse live cell applications and offering adaptable setups for research needs.

Semi-Apochromatic Objective

The LWD semi-apochromatic objective with calibration ring compensates for cover glass thickness variations, ensuring accurate focusing performance and delivering consistently high-quality imaging.

Professional Software

The included software suite offers over 50 biomedical imaging tools, enabling camera control, stitching, autofocusing, depth-field extension, and multi-channel fluorescence with one-click reporting.



TECHNICAL SPECIFICATIONS

LASER COUPLER AND CONTROL UNIT

Supports coupling of lasers with ≥ 4 wavelengths

Laser output modulated via AOTF or direct signal;
standby mode extends laser lifespan

Laser power suitable for low-light imaging	Semiconductor Laser, wavelength 405 nm, output power ≥ 50 mW
	Semiconductor Laser, wavelength 488 nm, output power ≥ 50 mW
	Wavelength 594 nm Customized Semiconductor Laser, output power ≥ 50 mW
	Wavelength 561 nm Solid-State Laser, output power ≥ 50 mW
	Wavelength 640 nm Semiconductor Laser, output power ≥ 40 mW

CONFOCAL MODULE

Integrated scanning and detection without fiber optics

XY Mirrors ≥ 2 ; Field of view ≥ 20 mm

Scan resolution:	512×512 to 8192×8192 (up to 67.1 million pixels)
Pixel integration time:	0.5–10 μ s
Scan	Quick Scan: 3 fps @ 512×512
	Standard: 0.88 fps
Zoom range:	1–50 \times , continuously adjustable
Fluorescence detector:	GaAsP, quantum efficiency $\geq 45\%$ @ 500 nm, $\geq 40\%$ @ 600 nm (photomultiplier tube is built in to the scanning module, non fiber optic connection)
6-hole electric filter wheel, equipped with 4 filters:	460nm/50525nm/50600nm/50 and 690nm/50nm, with a laser cutting efficiency OD ≥ 6
DIC imaging with electric switch; supports overlay analysis	

TECHNICAL SPECIFICATIONS

MICROSCOPE	
Eyepiece	High-eye-point eyepiece PL10X
Observation Head	Adjustable binocular head (20°~45°), pupil distance adjustment: 50–76 mm
Nosepiece	Electric 6-position nosepiece
Stage	Electric stage (350×248 mm), Travel: 114×75 mm Accuracy: 0.5 μm, resolution: 0.02 μm Max speed: 50 mm/s Includes 36Petri dish holder, 96 well plate holder, Teski holder;
DIC	Available at 10X, 20X, 40X, 60X
Spotlight	Electric 7-hole spotlight NA ≥ 0.55, WD ≥ 27 mm Equipped with electric aperture stop, turntable, and polarizer Supports bright field & contrast observation
Focusing Mechanism	Coarse/fine coaxial electric focusing, low-hand position Z-axis stroke: 10.5 mm Focusing accuracy: 10 nm

MICROSCOPE	
Front Display	Digital display shows objective magnification, transmission brightness, fluorescence band, etc. One-click switch: fluorescence, phase contrast, bright field
Fluorescence Source	<ul style="list-style-type: none"> • RFL-4LED with 4 excitation channels (365/460/525/625 nm) • Channel trigger: <500 ms • LED Power: 10W, lifetime >20,000 hours • Independent intensity control
Objective Lenses	<p>Focal length ≤ 45 mm, FOV ≥ 22 mm, compatible with most products:</p> <ul style="list-style-type: none"> • Infinite flat field apochromatic objective lens 4X ≥ 0.16, WD ≥ 12.8mm; • Infinite flat field apochromatic objective with 10X ≥ 0.40 and WD ≥ 3.10mm; • Infinite flat field super complex achromatic objective 20X ≥ 0.80, WD ≥ 0.60; • Infinite flat field super complex achromatic objective 40X ≥ 0.95, WD ≥ 0.18mm; • Infinite flat field super complex achromatic objective lens 60X ≥ 1.42, WD ≥ 0.17mm; • Infinite flat field super complex achromatic objective 100X ≥ 1.45, WD ≥ 0.14mm

TECHNICAL SPECIFICATIONS

MICROSCOPE	
Integrated Electric Controls	Fast switching via side panel or software for: Brightness, objectives, dimming dial, fluorescence dial, shutter
Light Ports	<ul style="list-style-type: none"> • Electric upper port: Spectral ratios 100:0 and 0:100 • Electric left port: Spectral ratios 0:100, 50:50, 100:0
Optical Path & Expansion	<ul style="list-style-type: none"> • Double-layer path with reserved expansion: • $\geq 250 \times 140 \times 65$ mm • Supports add-ons: fluorescent turntable, right light port, stabilizers
Transmissive Lighting	<ul style="list-style-type: none"> • Tiltable bracket, transmissive Kola lighting system • Adjustable spotlight bracket, travel ≥ 65 mm • Holds 4 color filters: LBD, green, frosted glass, etc.
Laser Safety	Auto-shutdown of laser when scanning & lighting bracket tilted

MICROSCOPE	
Transmission Lighting	<ul style="list-style-type: none"> • Long-life LED, 10W • Pre-centered filament • Uniform, high contrast, coaxial, stable color temp, near shadow-free
Fluorescent Device	<ul style="list-style-type: none"> • Electric 8-hole fluorescent turntable (up to 2 layers, 16 filters max) • Equipped with electric light gate & rack detection • Included filter sets: <ul style="list-style-type: none"> ◦ B: EX480/30, DI505DC, EM535/40 ◦ G: EX560/40, DI600DC, EM635/60 ◦ UV: EX375/28, DI415DC, EM460/50 ◦ R: EX620/50, DI655DC, EM690/50 • Supports additional filter blocks
Voltage	Electric control box with wide voltage input (90–265V AC), CAN bus output

TECHNICAL SPECIFICATIONS

OPERATING SOFTWARE	
System Compatibility	<ul style="list-style-type: none"> • Research grade software platform for laser tube confocal microscopy imaging system; • Windows 10 compatible
Imaging Modes	<ul style="list-style-type: none"> • Supports five-dimensional acquisition: x, y, z, λ, t • Supports combinations: $xy\lambda$, $xyz\lambda$, $xy\lambda t$, $xyz\lambda t$
Acquisition Functions	Multi-channel flow acquisition Multi-layer Z-stack acquisition Fluorescence image stitching Delayed (time-lapse) acquisition
Microscope Control	<ul style="list-style-type: none"> • Device management and parameter configuration • Objective lens & mode selection • Optical port switching • Z-axis control: single step, continuous, quick to position, reset • Light source brightness control • Fluorescence mode & light gate control • Spotlight & polarizer control including aperture adjustment

OPERATING SOFTWARE	
Scan Control	<ul style="list-style-type: none"> • Acquisition modes: Standard / Fast / Area scan • Pixel integration time: 0.5–10 μs • Resolution levels: 512 / 1024 / 2048 / 4096 / 8192 • Scanning: Single or Bidirectional • Magnification adjustment: 1x–50x • Frame overlay for weak signal & averaging for noise reduction
Stage Control	<ul style="list-style-type: none"> • 8-directional electric stage movement • Platform position display • Jog step adjustment • Stage position memory & recovery
Z-axis Control	<ul style="list-style-type: none"> • Adjust via objective converter • Digital display of Z-axis position • Step movement, reset, XYZ memory & recovery
Image Acquisition	<ul style="list-style-type: none"> • Multi-channel acquisition with individual channel control • Configurable: Laser, filter block, laser power, PMT gain, signal offset • Supported formats: TIFF, BMP, PNG, JPG

TECHNICAL SPECIFICATIONS

OPERATING SOFTWARE	
Image Information Storage	Records: <ul style="list-style-type: none"> • Acquisition & imaging modes • Objective magnification • Pixel integration time • Field of view size & resolution • Channel config (laser power, PMT gain, offset) • Layer scan parameters (start/end/layers/interval) • Image naming list
Image Preview	<ul style="list-style-type: none"> • Multi-channel simultaneous preview • Real-time channel synthesis • Live image histogram & threshold adjustments
Image Annotation	Length, optical density, angle measurements Scale bar display

OPERATING SOFTWARE	
Image Processing	<ul style="list-style-type: none"> • 3D reconstruction & visualization • Colocalization & linked analysis • Image flip/mirror • Background removal • Dynamic image generation • Stack & ROI processing
Image Analysis	Supports analysis of: <ul style="list-style-type: none"> • Perimeter, area, roundness • Max/min grayscale • Scale bar • Colocalization analysis • Cell counting

TECHNICAL SPECIFICATIONS

COMPUTER	
CPU	Intel Core i7-13700 or higher
RAM	≥ 32 GB
Storage	≥ 1 TB SSD
Graphics Card	NVIDIA RTX 3060 Ti or better
Display	34-inch monitor, 3840×1440 resolution

OPTICAL PLATFORM	
Table size	≥ 1000 × 800 mm
Material	Stainless steel (1Cr17), sub-gloss textured
Flatness	0.05–0.10 mm/m ²
Supports	Four legs with connecting rods
Leveling	Mechanical
Surface roughness	0.8–1.6 μm; M6 holes at 25 mm × 25 mm
Natural frequency	10–12 Hz



USA | CANADA | UAE | GCC | EU | INDIA | APAC | AFRICA | LATIN AMERICA

Connect with us

Contact our **QualiTeam** today to find out how we can help your organization **select the most suitable testing solution** for your application, requirements, and budget.

Qualitest USA (Corporate Sales Office)

Toll-Free: 1.877.884.TEST (8378) | Fax: 954.697.8211
E-mail: info@qualitest-inc.com
Address: 8201 Peters Rd., #1000,
Plantation, FL 33324, USA.

Qualitest KSA (Regional Office)

Tel: +966 11 500 6659
Address: Level 7, 3.09, District 3, King Abdullah
Financial District, Riyadh, Saudi Arabia

Qualitest Canada & International

Tel: +1.905.944.9825 | Fax: +1.905.944.0304
E-mail: sales@qualitest-inc.com
Address: 70 East Beaver Creek Rd., #9, Richmond Hill,
Ontario L4B 3B2, Canada.

Qualitest Singapore (ASIA PACIFIC Regional Office)

Tel: +65 6393 5480 | E-mail: singapore@qualitest-inc.com
Address: 50 Raffles Place, Singapore Land Tower,
Level 46, Singapore, 048623.

Qualitest Latin America (Mexico and LATAM Region)

E-mail: ventas@qualitest-inc.com

Qualitest Indonesia (Representative Office)

Tel: +62 21 2985 9522 | Fax: +62 21 2985 9889
E-mail: indonesia@qualitest-inc.com
Address: One Pacific Place Level 11, Jl. Jend. Sudirman,
Kav. 52-53, SCBD Area, Jakarta 12190, Indonesia.

Qualitest FZE (Regional GCC/ME Office)

Tel: +971 4 8819252 | Fax: +971 4 8819262
Email: gcc@qualitest-inc.com
Address: Jafza One, BB 1610, Jebel Ali Free Zone,
PO Box 261440, Dubai, UAE.

Qualitest India

E-mail: india@qualitest-inc.com
Address: 15th Floor, Dev Corpora, Pokhran Road No.1,
Eastern Express Highway, Thane, Maharashtra,
Mumbai, 400601, India

