

MACH-Series

PRODUCTION MICROFILM SCANNERS

MEET (OR EXCEED) TRUE OPTICAL DPI AND SPEED REQUIREMENTS WITH EASE AND PRECISION

For archivists, records managers and service bureaus there is no greater measure of digitization success than accuracy to the original media. The award-winning [Mekel Technology MACH-series](#) microfilm scanners pair maximum efficiencies with adherence to FADGI, Metamorfoze and International Standards Organization (ISO) preservation specifications for an unmatched return on investment.

MACH-SERIES SCANNERS FEATURE:



- 24/7 operation with minimal maintenance requirements
- 16 mm and 35 mm microfilm capabilities
- 1,000' rollfilm and 3M/ANSI/Ektamate cartridge handling as standard
- Digital conversion to most electronic imaging formats including text-searchable PDF varieties and archival formats
- Accurate image capture from microfilm in varying states of decomposition
- Vertical transport system for stable and gentle film handling
- Fast throughput
- Highly-refined precision lenses
- Mekel's one-of-a-kind **QuantumScan** and **QuantumProcess** [software suites](#)
- A sophisticated toolkit of automated and manual image processing features to guarantee the best image quality possible and eliminate the need for rescans
- 100% accurate image capture on first pass — no reloads necessary
- External PC system for maximum uptime and easy technology updates
- Calibrated/focused LED light source
- Sturdy case with built-in reel storage
- "Load and go" intuitive operation
- Compatible with [iMAGEhost](#)*



MACH10

- Combines speed and image quality for highest efficiency
- Scans 700 images or more per minute/three minutes per 100' roll (1400 images or more per minute via speed mode)

MACH5

- Industry standard for production microfilm scanners
- Scans 500 images or more per minute/four minutes per 100' roll (1000 images or more per minute via speed mode)

“ We would have to charge double or triple the price if we were using our former scanners. With the MACH-series, we require less scanners, less operators and have been able to cut the cost of rescans due to the higher quality images. We are saving hundreds of dollars per day, per operator, since installing the Mekel products. ”

~ Conversion service manager, West Coast Imaging Bureau

For those with unique resolution or space saving needs, ask about the archival MACH12 model and the portable Crowley MACH Mini scanner options.

QuantumM SOFTWARE

Increased operator production

- Scan at full-speeds without operator intervention
- Drive multiple MACH-series microfilm scanners with a single operator
- Share quality assurance tasks with multiple operators

Reduce microform scanning costs

- Never search for lost images
- Eliminate the need for rescans

Guaranteed 100% image capture

Optimum image quality

Windows 10 support

QuantumM Scan

- ▶ Automatic Frame Detection
- ▶ Speed
- ▶ Optimum Resolution
- ▶ Template Options
- ▶ Image Quality Settings
- ▶ Advanced Focus Option
- ▶ Pre-Scan Testing
- ▶ Multiple Ribbon Output Options
- ▶ Advanced Frame Detection
- ▶ Easy Transfer
- ▶ Easy Workflow Integration
- ▶ IMAGEhost Integration*



QuantumM Process

- ▶ Optical Character Recognition (OCR)
- ▶ Batch Processing
- ▶ Strip Zoom Capability
- ▶ Editing Toolkit
- ▶ Fixed-Grid Frame Replication
- ▶ Blip Removal
- ▶ Irregular Frame Flag
- ▶ Custom Processing
- ▶ Multiple Output Options
- ▶ Easy Workflow Integration
- ▶ Image Enhancement
- ▶ File-Naming Features
- ▶ Auto-Split and Book Mode
- ▶ "Go To" Command
- ▶ Re-Detect Frames
- ▶ Blackout Framing
- ▶ Document Separation Tagging

HARDWARE	
Camera/Optics	Up to 12-bit dynamic range with gamma correction grayscale output. Full depth of pixels processed. Superior real-time or post-scan image processing speed Direct path imaging: camera, film and light source are in-line to ensure optimum image quality Full 8,192 pixel CCD array for highest true optical dpi in the industry Automatic Gain Control (AGC) to optimize image quality while scanning Mekel smoothlight fiber optic bundle balances lighting across entire scan area; no hot spots or shadowing
Resolution	100-600 true optical dpi; 4x-96x reduction ratio range
Film Types (100', 215' and 1,000' roll standard)	16 mm and 35 mm microfilm; ANSI, M-types, Kodak Ekamate and open spools; simplex/duplex; positive/negative; Silver, Diazo and Vesicular formats
Hardware Image Enhancement	Real-time image sharpen and enhancement done in hardware with no reduction in throughput
Film Control	Electronically-controlled film format selection for precise positioning of the CCD camera and lens High-speed rewind
Hardware Notables	Industry-leading reliability Film cleaning rollers: custom technology cleans film as it scans if desired No pinch rollers to dislodge or separate brittle/old film splices Superior transport stability via vertically-aligned film transport system Completes rolls in half the time using speed mode No adaptive speed control necessary

SCAN SPEEDS		
Scan Options	MACH10	MACH5
QuantumScan Speed (100' roll, 200 dpi)	3 mins	4 mins
QuantumScan Speed (100' roll, 300 dpi)	4.5 mins	6 mins
Rollfilm Speed at 200 dpi *speed mode	700 images/1400* images or more per minute	500 images/1000* images or more per minute

PROCESSING & OUTPUT	
Quantum Image Processing	Task set-up by job or saved in set-up file 1600 images or more per minute (32 bit; 64 bit higher) Single-, double- or triple-level blip code detection Full frame, leading and trail edge image detection
File Formats	Simultaneous grayscale and bitonal output; single or multi-page TIFF and PDF; TIFF (G4/LZW/uncompressed), JPEG, PDF, PDF/A, JPEG2000, bitonal CALS type 1 and others; OCR output to single/multi-page .PDF, .TXT and HOCR formats
IMAGEhost Option*	Crowley software platform for online image hosting, storage, easy retrieval, editing and output

GENERAL TECHNICAL INFORMATION	
Agency Approvals	FCC, UL and CE certification
Power Requirement	50Hz or 60Hz; 90-240v; 500w, single-phase switch for domestic or international use
Operating System	Windows 10 Pro (64-bit only) Includes external Dell high-end multi-processor, multi-core workstation for maximum uptime and performance Visit www.thecrowleycompany.com for full PC specs
Dimensions (LxWxH)	15.5 x 15.5 x 22 in (394 x 394 x 560 mm)
Weight	50 lbs/22.7 kg



DIGITIZATION PRODUCTS



DIGITIZATION SERVICES



SUPPORT SERVICES

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