MEKEL Technology
A CROWLEY Company

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# MEET THE MACH MICROFILM SCANNERS

## And Meet (or Exceed) True Optical DPI 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. Moreover, accuracy has to be paired with maximum efficiency in order to be cost-effective. The Mekel Technology ***MACH-series*** microfilm scanners combine the best of worlds, following FADGI, Metamorfoze and International Standards Organization (ISO) preservation specifications and pairing them with innovative technology for an unmatched return on investment.


### ALL MEKEL PRODUCTION MICROFILM SYSTEMS FEATURE:

- Robust work ethic; 24/7 operation with minimal maintenance requirements
- 16mm and 35mm microfilm conversion capability
- Scanning up to 1,000' rollfilm and 3M/ANSI/Ektamate cartridges as standard
- Conversion to most electronic imaging formats, including text-searchable PDF varieties and archival formats
- Fast throughput
- Highly-refined precision lenses
- Mekel's one-of-a-kind QuantuM Scan and QuantuM Process suites
- 100% accurate image capture. Scan once and be done — no re-loading necessary.
- A sophisticated toolkit of automated and manual image processing features to guarantee the best image quality possible and eliminate the need for rescans
- An external PC, allowing for maximum uptime and technology updates
- Calibrated/focused LED light source
- Sturdy case with built-in reel storage
- Stable and gentle transport system
- "Load and go" intuitive operation

### MACH12 Key Features

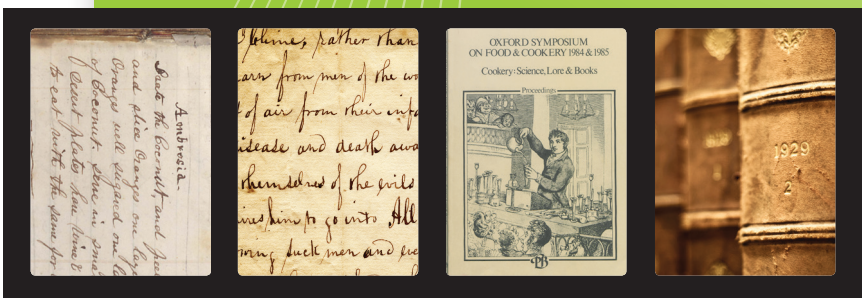
- High optical resolution: 100-750 dpi true optical resolution
- 12-bit camera exceeds true optical dpi requirements for capture of books, newspapers, manuscripts, financial records and more
- Unrivaled image quality and capture accuracy – excellent tonality and depth of field
- Crystal clear scanning of small fonts and highly-reduced images
- High OCR accuracy due to exceptional image quality

### MACH10 Key Features

- Highest efficiency for the combination of speed and image quality
- Scans 700 images or more per minute/3 minutes per 100' roll (1400 images or more per minute via speed mode)

### MACH5 Key Features

- Offers speed and image quality when scanning a wide variety of microfilm in various states of composition
- Scans under 6 minutes per 100'roll




*"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 $144.00 per day, per operator, since installing the Mekel products."* Conversion service manager, West Coast Imaging Bureau

MADE IN AMERICA

# MEKEL 2.0 FEATURES


**Increased operator production**

- Scan at full-rated speeds without operator intervention
- Share quality assurance tasks with multiple operators
- Drive multiple ***MACH12, 10*** or ***5*** microfilm scanners with a single operator

**Reduced microform scanning costs**

- Never search for lost images
- Eliminate the need to re-scan

**Guaranteed 100% image capture**

**Optimum image quality**

**Windows 10 Support**

## QuantuM 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
- Easy **IMAGEhost** Integration

## QuantuM 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

# TECHNICAL SPECIFICATIONS

| | MACH12 | MACH10 | MACH5 |
|---|---|---|---|
| **CAMERA/OPTICS** | | | |
| Up to 12-bit dynamic range with gamma correction grayscale output. Full depth of pixels processed. | X | | |
| 10-bit dynamic range with gamma correction grayscale output. Full depth of pixels processed. | | X | X |
| Superior real-time or post-scan image processing speed | X | X | X |
| Direct path imaging: camera, film and light source are in-line to ensure optimum image quality | X | X | X |
| 160 megapixel/second camera; 320 megapixel/second output | | X | |
| 80 megapixel/second camera; 160 megapixel/second output | | | X |
| Full 12,288 pixel CCD array for highest true optical dpi in the industry | X | | |
| Full 8,192 pixel CCD array for highest true optical dpi in the industry | | X | X |
| Automatic Gain Control (AGC) to optimize image quality while scanning | X | X | X |
| Mekel smoothlight fiber optic bundle balances lighting across entire scan area; no hot spots or shadowing | X | X | X |
| **RESOLUTION** | | | |
| 100-600 true optical dpi; 4x - 96x reduction ratio range | X | X | X |
| 100-750 true optical dpi; 4x - 96x reduction ratio range | X | | |
| **FILM TYPES** (100', 215' and 1,000' roll standard) | | | |
| Accepts ANSI, M-types, Kodak Ektamate and open spools | X | X | X |
| 16mm/35mm; simplex/duplex; positive/negative | X | X | X |
| Silver, Diazo and Vesicular formats | X | X | X |
| **QUANTUM SPEED** (100' roll) | | | |
| 200 dpi using *QuantumScan* | 4.5 mins* | 3 mins | 6 mins |
| 300 dpi using *QuantumScan* | 6.5 mins* | 4.5 mins | 9 mins |
| Complete rolls in half the time using speed mode | X | X | X |
| **ROLL-FILM SPEED** (per image) | | | |
| 700 images/1400 files or more per minute at 200 dpi using speed mode | | | X |
| 440 images or more | X | | |
| 350 images/700 files or more per minute at 200 dpi using speed mode | | | X |
| No adaptive speed control necessary | X | X | X |
| Complete rolls in half the time using speed mode | | X | X |
| **HARDWARE IMAGE ENHANCEMENT** | | | |
| Real-time image sharpen and enhancement done in hardware; no reduction in throughput | X | X | X |
| **FILM CONTROL** | | | |
| Electronically-controlled film format selection for precise positioning of the CCD camera and lens; high-speed rewind | X | X | X |
| **QUANTUM IMAGE PROCESSING** | | | |
| Task set-up by job or saved in set-up file | X | X | X |
| 1600 images or more per minute (32 bit; 64 bit higher) | X | X | X |
| Single-, double- or triple-level blip code detection | X | X | X |
| Full frame, leading and trail edge image detection | X | X | X |
| Simultaneous output to grayscale and bitonal formats | X | X | X |
| Output to single or multi-page TIFF and PDF | X | X | X |
| Output to TIFF (G4/LZW/uncompressed), JPEG, PDF, PDF/A, JPEG2000, bitonal CALS type 1 and others | X | X | X |
| OCR output to single/multi-page .pdf, .txt and HOCR formats | X | X | X |
| **HARDWARE NOTABLES** | | | |
| Industry-leading reliability | X | X | X |
| Film cleaning rollers: custom technology cleans film as it scans if desired | X | X | X |
| No pinch rollers to dislodge or separate brittle/old film splices | X | X | X |
| Superior transport stability via vertically-aligned film transport system | X | X | X |

*"Our operator speaks very little English, but she's making QuantumScan and QuantumProcess sing."*

Operations Manager,
Southeast service bureau

MODERN LIBRARY AWARDS

* at higher resolution then MACH5 or MACH10

**TECHNICAL SPECIFICATIONS**

| | |
|---|---|
| Operating System: | Windows 7, 8, 10 — All professional and 64-bit only |
| Power Requirements: | 50Hz or 60Hz; 90-240v; 500w, single-phase switch for domestic or international use |
| Agency Approvals: | FCC, UL and CE certification |
| Dimensions (LxWxH)/Weight: | 15.5 x 15.5 x 22 in. (50 lbs.) |

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