Minolta DiMAGE Scan Multi PRO
The Next High-Performance, Versatile Multi-Format Film Scanner from MINOLTA
Delivering Professional-Quality Images

Popular Photography said, the original DiMAGE Scan Multi was “in a class by itself...features high-resolution, wide dynamic range, and great color,” and “offers image quality and features worth its premium price.”*1 About our next scanner, PC Magazine said, “the Multi II is a solid performer that produces quality scans...”*2 Building on our experience with professional multiple-format scanners, we are pleased to introduce the next generation multi-format scanner from Minolta, the DiMAGE Scan Multi PRO.

This versatile, all-round scanner is a perfect imaging tool for professional photographers, studios, designers, artists, printers, medical researchers, and R&D institutions. It can transform 35mm format and medium-format (120/220) negatives and transparencies into professional-quality digital images effortlessly. The optional Multi-format Set can be used to scan non-standard sources and sizes such as 16mm film, TEM (Transmission Electron Microscope) film, microfilm in aperture cards, and microscope slides.

With a class-leading, maximum input resolution of 4,800dpi, the new Multi PRO can scan a variety of film, from 35mm to medium-format (120/220) films.†1 Fine 16-bit A/D conversion, and the 4.8 dynamic range (among the highest in its class) preserves subtle tones and details from the shadows to the highlights.
DiMAGE Scan Multi PRO’s driver software allows high quality, flexible, simple scanning and is supported by Applied Science Fiction’s Digital ICE™ technology that minimizes surface defects, restores color, and reduces grain. The software can be used as a Photoshop plug-in for Macintosh, TWAIN driver for Windows, or a stand-alone utility for both. Transferring the huge image files to the computer is quick and easy with the supplied IEEE 1394 (FireWire) and Ultra SCSI cables. The DiMAGE Scan Multi PRO is a multi-talented scanner built to support professionals.

*1, *2 See Appendix
†1 With formats larger than 35mm, the resolution of 4,800 dpi is achieved by interpolation in the main-scanning direction.
Main Features

Class-Leading Maximum Input Resolution of 4,800 dpi
The input resolution of 4,800 dpi means that 35mm photographers can produce fine exhibition-quality printouts. With a pixel count over 33-million, an A3-size output can retain a resolution of over 400 dpi. The 4,800 dpi input resolution is also available with medium-format film.†1 This produces 169 million pixels with a 6x9 image, giving an output well over A2-size with a resolution of over 600 dpi. For commercial photo and design studios, this resolution allows an image to be cropped while retaining the resolution needed for professional work. The scanner’s core component, a 7,260-pixel, 3-line color CCD, is enhanced by the inclusion of a dual-focal-length lens system, the product of Minolta’s expertise in high-precision optics. This combination makes it possible to produce quality scans from any of the compatible film types.

16-bit A/D Conversion, a Wide 4.8 Dynamic Range, and 16-bit Output
Capturing Color and Details from Highlights to Shadows
The 16-bit input can handle 65,536 gradations per color channel, 16 times greater than the Dimâge Scan Multi II’s performance. The 4.8 dynamic range ensures shadow and highlight details are retained. The DiMAGE Scan Multi PRO’s 16-bit output preserves the details of the original scan.

Professional image quality depends on the ability to retain the subtlety and detail of the original image. Whether for creative or scientific use, retention of detail determines the value of an image. The Multi PRO can reproduce the fine gradations and details not only in the mid-tones, but also in the highlights and shadows.
Optional Multi-Format Set Covers Various Film Formats
The DiMAGE Scan Multi Pro can scan 35mm and medium-format (120/220) films with the supplied film holders, but the optional Multi Format Set enables scanning more types of special size film. These film sizes include TEM (Transmission Electron Microscope) film, microfilm in aperture cards, microscope slides, 16mm film, Minox, and 24 x 65mm panorama format.

Digital ICE³™ – Sophisticated Digital Enhancement Tools that Significantly Reduces Total Work Time
The DiMAGE Scan Multi PRO is one of a few desktop film scanners that provide Digital ICE³™ (Digital ICE Cubed). Digital ICE³™ is a combination of three sophisticated digital enhancement tools from Applied Science Fiction: Digital ICE (Image Correction & Enhancement), Digital ROC (Reconstruction of Color), and Digital GEM (Grain Equalization and Management). Digital ICE³™ saves time and money by producing professional-quality images without resorting to time-consuming digital retouching, or hiring outside digital service bureaus.

This trio of image processing tools can be selected individually or in combination. Digital ICE™ significantly reduces surface defects in the film such as scratches and fingerprints; the advantage of this tool is apparent when working with enlarged images.* Digital ROC™ reconstructs the color of faded or badly exposed film, allowing photographers to preserve their film assets and protect their shooting investments. Digital GEM™ minimizes image grain without effecting image detail, enhancing pictures from high-speed film or enlargements of high-resolution scans.

* Digital ICE™ is applicable to color film only and is not recommended for use with Kodachrome film.
IEEE 1394 (FireWire) and Ultra SCSI
Dual, High-Speed Interfaces Facilitates the Handling of Large Image Files
The DiMAGE Scan Multi PRO will change the idea that transferring high-resolution images is slow and frustrating. If the computer supports IEEE 1394 or Ultra SCSI interfaces, the DiMAGE Scan Multi PRO allows rapid transfer of large files with the supplied cables.

Driver Software that Controls Professional Scanning
The driver software is the scanning control center. While allowing a variety of flexible image corrections, the quality of the scanned images is consistently high, requiring little if any additional corrections with photo-retouching software. The graphic user interface makes use of all the sophisticated functions simple. Tab partitions and graphic function buttons allow for quick, easy access.

Accurate Scanning
Even low contrast images can be focused accurately with Minolta's new autofocusing system, which employs film grain. The standard autofocus mode quickly focuses on the center of the image and produces razor-sharp scans. The Point AF mode is able to focus accurately on any point in the film area. Images can also be manually focused or defocused using a slider bar.

Image processing gives additional control over image sharpness. If the original film image is soft, edges and details can be sharpened using the new unsharp mask, which produces subtle yet striking micro-image edge enhancement without effecting smooth gradations.

Multi-sample scanning delivers virtually noise-free images, giving smooth and natural results. 2, 4, 8, or 16 samples can be taken. Multi-sample scans reduce random noise by averaging the sampled images.

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The DiMAGE Scan Multi PRO’s reproduction performance with negative film is a remarkable advance over the Multi II's. The Multi PRO automatically adjusts to the density range of the scanned negative to optimize the reproduction. For example, negatives with a large density range, such as pictures with backlit subjects, are controlled so that the highlight area retains detail rather than being washed out. Color images with a dominant color are analyzed to preserve the original appearance of the scene.

Advanced color matching ensures that the colors in the scanned image are very close to the original film. In combination with photo-retouching applications featuring color management systems, scanned images retain virtually the same colors when used with different monitors and operating systems. This is essential for fine color control. The color matching system is compatible with all common monitors: sRGB, Apple RGB, SMPTE-C, PAL/SECAM, NTSC, etc.

**Flexible Image Correction**

The AE Area Lock allows users to adjust the exposure of the film by selecting an area on the image, which is then used to calculate a new exposure. Color tools allow flexible correction with R/G/B Color Balance or the Hue, Saturation, and Lightness Correction palette. The tone curve and histogram is laid out in one window for quick and easy access. Fine adjustments can be made to a specific color on the Selective Color Correction palette.

During correction, images can be temporarily saved with a click of the Snap Shot icon. Users can jump back and forth between the thumbnails to compare changes made to the image and chose the best result. The Image Correction Job function saves a specific correction setting, which can be recalled and applied to other images. With Pre/Post Correction Comparison, users can compare before and after images of corrections.
Automated Scanning Procedures Increase Productivity

The DiMAGE Scan Multi PRO substantially automates the whole scanning procedure. Users simply set up the scanner with the Custom Wizard. With the click of a mouse, the Custom Wizard can start the pre-scan, crop the image to the holder frame, apply Digital ICE³, activate the Image Correction Job function, carry out the final scanning, and eject the holder. Custom Wizard can control the continuous scanning of 35mm film; the Multi PRO can scan four mounted slides or a six-frame filmstrip at one time.
**DiMAGE Scan Multi PRO**

**Technical Specifications**

* with the optional Multi Format Set

**Usable films**

35mm film

(Including 24 x 65mm panorama format):

Color/B&W, Negative/positive

Medium-format film (120/220): 6 x 4.5 cm, 6 x 6 cm, 6 x 7 cm, 6 x 8 cm, 6 x 9 cm

Color/B&W, Negative/positive

16mm film:* Color/B&W, Negative/positive

Minox film:* Color/B&W, Negative/positive

TEM film:* 5.9 x 8.15 cm, 5.9 x 16.3 cm, 8.3 x 10.2 cm, 8.2 x 11.8 cm

Color/B&W, Negative/positive

Microfilm in aperture cards:* Film frame: 3.55 x 4.85 cm or smaller

Card size: 8.25 x 18.7 cm or smaller

Color/B&W, Negative/positive

Microscope slides*

**Optical resolution (main-scanning direction x feed direction):**

35mm film: 4,800 x 4,800 dpi

Medium-format film (120/220): 3,200 x 4,800 dpi

**Maximum input resolution (main-scanning direction x feed direction):**

35mm: 4,800 x 4,800 dpi

Medium format film (120/220): 4,800 (by interpolation) x 4,800 dpi

**Scan size:**

35mm film: 25.02 x 37.08mm

Medium-format film (120/220): 6 x 4.5: 56.58 x 42.67mm

6 x 6: 56.58 x 56.58 mm

6 x 7: 56.58 x 70.10 mm

6 x 8: 56.58 x 77.15 mm
6 x 9: 56.58 x 83.82 mm
Multi formats:* 35mm film (24 x 65mm panorama format), 16mm film, Minox film, TEM film, microfilm in aperture cards, and microscope slides can be scanned within the following sizes:
Multi-format 35mm: 25.02 x 83.82 mm
Multi-format 6 x 9: 56.58 x 83.82 mm

Maximum input pixels (at 4,800 dpi):
35mm film: 4,728 x 7,008
Medium-format film (120/220):
6 x 4.5: 10,692 x 8,064
6 x 6: 10,692 x 10,692
6 x 7: 10,692 x 13,248
6 x 8: 10,692 x 14,580
6 x 9: 10,692 x 15,840
Multi formats:* 35mm film (24 x 65mm panorama format), 16mm film, Minox film, TEM film, Microfilm on aperture cards, Microscope slides can be scanned within the following number of pixels:
Multi-format 35mm: 4,728 x 15,840
Multi-format 6 x 9: 10,692 x 15,840

Scan method: Fixed film, moving sensor, 1-pass scan
Sensor type: 3-line color CCD
Number of pixels: 7,260 pixels per line
Filter: RGB primary-color filter
Scan time: Approximate time with positive film, 4800 dpi input resolution, 8-bit output color depth, no Digital ICE³, no cropping, no autoexposure, no color matching:
* Scanning time will increase when using any of the Digital ICE³.

Macintosh:
Pre-scan  Final scan  Index scan (6 frames)
35mm film: 10 s  50 s  35 s
### 6x9 film:

|                | 15 s | 250 s | -- |

**System environment:**
- **CPU:** PowerPC G4 533 MHz
- **RAM:** 1.5 GB
- **Hard disk space:** 35GB
- **Operating system:** Mac OS 9.1
- **Application:** Adobe Photoshop 6.0
  - **Memory allocated to application:** 1.2 GB
  - **Interface:** FireWire (IEEE 1394) as standard

**Windows:**
- **Pre-scan**
- **Final scan**
- **Index scan (6 frames)**

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<td>6x9 film:</td>
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**System environment:**
- **CPU:** Pentium IV 1.5 GHz
- **RAM:** 1 GB
- **Hard disk space:** 19 GB
- **Operating system:** Windows 2000 Professional
- **Application:** Adobe Photoshop 6.0
  - **Memory allocated to application:** 800 MB
  - **Interface:** Adaptec AFW-4300

**Multi-sample scanning:**
- 2X, 4X, 8X, 16X, Off

**Continuous scan:**
- 35mm-film Holder: 6 frames (max.)
- Slide Mount Holder: 4 frames (max.)

**A/D conversion:**
16 bits

**Output data:**
8 bits, 16 bits (per color channel)

**Dynamic range:**
4.8

**PC interface:**
- Ultra SCSI: D-sub half-pitch 50p x2
- IEEE 1394: IEEE 1394 6p x2

**Focus:**
Autofocus (Point AF available), Manual focus

**Light source:**
3-wave fluorescent lamp

**Power requirements:**
- Voltage: 100-240V AC
- Frequency: 50/60Hz

**Dimensions:**
168(W) x 128(H) x 377(D) mm

**Weight (Scanning unit only):**
4 kg (approx.)
Standard accessories:
- 35mm-film Holder FH-P1
- Slide Mount Holder SH-P1
- Universal Holder UH-P1
- Standard Attachment HA-P1
- Glassless Attachment HA-P2
- Film Mask Set FM-P1 (6x4.5, 6x6, 6x7, 6x8, 6x9 medium-format masks)
- SCSI Cable SC-P1
- IEEE1394 Cable FC-P1
- CD-ROM for DiMAGE Scan Multi PRO

Optional accessories:
- Multi Format Set (Multi Format Attachment HA-P3, Multi-Format Mask FM-P2, Pins PI-1†)

† not sold in every country

Specifications and accessories are based on the latest information available at the time of printing and are subject to change without notice.

Specification figures are based on Minolta’s standard test method.
System Requirements

MACINTOSH – FireWire (IEEE 1394)

**Computer:** Apple Macintosh† with a FireWire (IEEE 1394) port as standard interface

**CPU:** PowerPC G3 or later (PowerPC G4 is recommended for scanning with ICE, ROC, GEM, and 16-bit output.)

**Operating system:** Mac OS 8.6 – 9.1

**Memory:** A minimum of 64MB free memory in addition to the requirements for the Mac OS and applications (256MB or more for scanning with ICE, ROC, GEM, and 16-bit output. **512MB or more is recommended**.)

**Hard disk space:** 20MB for installation

* Example: an average medium-format 6x9 image at 4,800 dpi, with 8-bit output, and without the use of Digital ICE, ROC or GEM is approximately 500 MB. The required space will be approximately 2 GB.

**Monitor:** 1024 x 768 pixels or greater with 32,000 colors or more is recommended.
A monitor with 640 x 480 pixels can also be used.

**Other:** Photoshop plug-in driver software has been fully tested for use with Adobe Photoshop ver. 5.0.2, 5.5, 6, and 5.0LE. ColorSync profile is included in the CD-ROM for DiMAGE Scan Multi PRO.

† Excludes notebook PCs
MACINTOSH – Ultra SCSI

Computer: Apple Macintosh models† with SCSI Manager ver. 4.3
CPU: PowerPC 604 or later (PowerPC G3 or later, PowerPC G4 is recommended for scanning with ICE, ROC, GEM, and 16-bit output. PowerPC G4 is recommended.)
Operating system: Mac OS 8.6 – 9.1
Memory: A minimum of 64MB free memory in addition to the requirements for the Mac OS and applications (256MB or more for scanning with ICE, ROC, GEM, and 16-bit output. 512MB or more is recommended.)
Hard disk space: 20MB for installation
4 times or more the size of the image is required for scanning.*
  * Example: an average medium-format 6x9 image at 4,800 dpi, with 8-bit output, and without the use of Digital ICE, ROC or GEM is approximately 500 MB. The required space will be approximately 2 GB.
Monitor: 1024 x 768 pixels or greater with 32,000 colors or more is recommended.
A monitor with 640 x 480 pixels can also be used.
Recommended SCSI board: Adaptec PowerDomain 2940UW, 2940U2W, 2930U, 29160N
Other: Photoshop plug-in driver software has been fully tested for use with Adobe Photoshop ver. 5.0.2, 5.5, 6, and 5.0LE.
ColorSync profile is included in the CD-ROM for DiMAGE Scan Multi PRO.

† Excludes notebook PCs
PC/AT – IEEE 1394

Computer: IBM PC/AT compatible models†1†2 equipped with an OHCI-compliant IEEE 1394-port

CPU: Intel Pentium II or later. Pentium III or later is recommended.

Operating system: Windows 2000 Professional or Windows Me

Memory: A minimum of 96MB of RAM (256 MB or more for scanning with ROC, GEM, and 16-bit output. 512MB or more is recommended.)

Hard disk space: 20MB for installation

4 times or more the size of the image is required for scanning.*

* Example: an average medium-format 6x9 image at 4,800 dpi, with 8-bit output, and without the use of Digital ICE, ROC or GEM is approximately 500 MB. The required space will be approximately 2 GB.

Monitor: 1024 x 768 pixels or greater with 32,000 16-bit high colors or more is recommended.

A monitor with 640 x 480 pixels can also be used.

Recommended IEEE1394 board interface:

Adaptec FireConnect 4300 AFW-4300 OHCI-compliant IEEE 1394 port as standard interface†3

Other: Adobe Photoshop ver. 4.0.1, 5.0.2, 5.5, 6, and 5.0LE have been fully tested for use with the TWAIN driver software.

†1 Only for PCs with pre-installed operating systems
†2 Excludes notebook PCs
†3 Non-DV-dedicated IEEE 1394 port guaranteed by PC manufacturers
PC/AT – Ultra SCSI

**Computer:** IBM PC/AT compatible models†¹†²

**CPU:** Intel Pentium 166 MHz processor or later (Pentium II or later for scanning with ROC, GEM, and 16-bit output. Pentium III or later is recommended.)

**Operating system:** Windows 98, Windows 98 Second Edition, Windows 2000 Professional, Windows Me, or Windows NT 4.0

**Memory:** A minimum of 96MB of RAM (256 MB or more for scanning with ROC, GEM, and 16-bit output. 512MB or more is recommended.)

**Hard disk space:** 20MB for installation
4 times or more the size of the image is required for scanning.*

* Example: an average medium-format 6x9 image at 4,800 dpi, with 8-bit output, and without the use of Digital ICE, ROC or GEM is approximately 500 MB. The required space will be approximately 2 GB.

**Monitor:** 1024 x 768 pixels or greater with 32,000 16-bit high colors or more is recommended.
A monitor with 640 x 480 pixels can also be used.

**Recommended SCSI board:**
Adaptec SCSI Card 19160, SCSI Card 29160, SCSI Card 29160N

**Other:** Adobe Photoshop ver. 4.0.1, 5.0.2, 5.5, 6, and 5.0LE have been fully tested for use with the TWAIN driver software.

†¹ Only for PCs with pre-installed operating systems
†² Excludes notebook PCs
System requirements are based on the latest information available at the time of printing and are subject to change without notice.

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* Windows is either a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.

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Appendix
