

///MotionScope® M1/M2

Redlake's *MotionScope*® M series of high-speed CMOS cameras combine ease-of-use and value for your high-speed motion applications. The *MotionScope* M1 provides amazing value, delivering 640 x 512 resolution at 1000 fps, while the *MotionScope* M2 offers lightning fast speeds up to 16,000 fps with reduced vertical resolutions, or maximum resolution of 1280 x 1024 at 500 fps.

Specifically optimized for design and diagnostic applications, the innovative *MotionScope* M1/M2 architecture puts these high-speed digital cameras in a class by themselves. Compact, lightweight and featuring Firewire connectivity, the *MotionScope* M1/M2 cameras offer all the benefits of advanced imaging technology.

The *MotionScope* M1 and M2 feature built-in image memory for storing the recorded high-speed sequence for playback, editing or downloading to the PC's hard disk. Just choose which image memory option best fits your application requirements. Flexible triggering lets you create the best pre- and post- event trigger settings enabling you to capture perfect images every time.

Thanks to their intuitive and reliable "point and click" Windows control software, the *MotionScope* M1 and M2 cameras are exceptionally simple to set up and operate. Optional Image Studio software is available with more advanced features. The cameras are interfaced to your PC via a standard Firewire (IEEE-1394) interface. In the event of a power failure, a battery backup option is available to ensure you never lose your data.

Small and Lightweight High-Speed Motion Camera



S N A P S H O T

- **Compact: 125 x 67 x 67 mm and only 1.65 lb (0.75 kg)**
- **Sturdy metal housing to withstand harsh industrial environments and electromagnetic radiation**
- **M1- frame rates of up to 1000 fps at 640 x 512**
- **M2- 1280 x 1024 at 500 fps, up to 16,000 fps at reduced vertical resolutions**
- **Firewire interface for easy set-up and fast image downloading**

A P P L I C A T I O N S

- **Quality inspection/control on system setup and installation, throughput improvement, and troubleshooting**
- **Process engineering on packing machines, materials handling/robotics, pulp and paper, printing and folding machines**
- **Process control**
- **Research (materials, biotechnology) in material stress tests, tools and process monitoring**

MotionScope® M1/M2

PERFORMANCE SPECIFICATIONS

Models	Mono (8-bit), color (24-bit)
Exposure	Global electronic shutter, speeds from 2µsec to 1 / frame rate
File formats	Raw data (Bayer format and AVI format) MPEG, BMP, JPEG, TIFF, GIF available with optional "Image Studio" software
Power	Power via FireWire or 12vdc power supply
Software	"Point and Click" user interface (Windows XP or 2000 compatible) Optional "Image Studio" software with advanced features
Standard Lenses	C-mount (1" format); other adapters optional
Camera Size	4.92" x 2.64" x 2.64" (125 x 67 x 67 mm)
Weight	1.65 lb (0.75 kg) without battery
Interface	FireWire (IEEE 1394)
Synchronization	Strobe Out signal (3.3v)

Note: Specs are subject to change at any time

MotionScope M1 Frame Rates and Resolution	
62.5 fps	640 x 512
125 fps	640 x 512
250 fps	640 x 512
500 fps	640 x 512
1000 fps	640 x 512

MotionScope M2 Frame Rates and Resolution	
62.5 to 500 fps	1280 x 1024
125 to 1000 fps	1280 x 512
250 to 2000 fps	1280 x 256
500 to 4000 fps	1280 x 128
1000 to 8000 fps	1280 x 64
2000 to 16,000 fps	1280 x 32

MotionScope M1 Memory		
Memory	Maximum Frames	Record Time at 640x512 - 1000 fps
325 MB (standard)	1024	1 second
650 MB	2048	2 seconds
1.3 GB	4096	4 seconds
2.6 GB	8192	8 seconds

MotionScope M2 Memory		
Memory	Maximum Frames	Record Time at 1280x1024 - 500 fps
325 MB (standard)	256	0.5 second
650 MB	512	1 second
1.3 GB	1024	2 seconds
2.6 GB	2048	4 seconds

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MotionScope M1/M2 Rev. A



///MotionScope® M3

Redlake's *MotionScope*® M3 high-speed CMOS camera combines ease-of-use and value for your high-speed motion application. The *MotionScope* M3 offers maximum resolution of 1280 x 1024 at 500 fps with frame rates up to 32,000 fps at reduced resolutions.

Specifically optimized for industrial applications, the innovative Redlake *MotionScope* M3 high-speed digital camera architecture puts it in a class by itself. Small, lightweight, stand-alone battery operation, and Firewire network connectivity are just a few attributes of the *MotionScope* M3 camera.

The *MotionScope* M3 features built-in image memory for storing the recorded high-speed sequence for playback, editing or downloading to the PC's hard disk. Just choose which image memory option best fits your application requirements. Flexible triggering lets you create the best pre- and post- event trigger settings enabling you to capture perfect images every time.

The *MotionScope* M3's internal battery comes standard and provides up to 30 minutes of standalone operation and up to 4 hours in stand-by mode. Since the *MotionScope* M3 is self-contained (no bulky processor or tethered cables to contend with) the only connection required is a trigger signal.

Thanks to its intuitive and reliable "point and click" Windows control software, the *MotionScope* M3 is exceptionally simple to set up and operate. Advanced features are included in the standard Image Studio software. The camera is interfaced to your PC via a standard Firewire (IEEE-1394) interface.

Small and Lightweight High-Speed Industrial Camera



S N A P S H O T

- **Compact: 125 x 67 x 67 mm and only 1.65 lb (0.75 kg)**
- **Sturdy metal housing to withstand harsh industrial environments**
- **Speeds of 500 fps at a full resolution of 1280 x 1024 up to 32,000 fps with reduced resolutions**
- **Internal battery to provide power for up to 30 minutes in recording mode (and up to 4 hours in standby mode)**
- **Firewire interface for easy set-up and fast image downloading**

A P P L I C A T I O N S

- **Process control**
- **Process engineering**
- **Quality inspection / control**
- **Research (materials, biotechnology, etc)**

MotionScope® M3

PERFORMANCE SPECIFICATIONS

Resolution	1280 x 1024 pixels full frame (8-bit mono or 24-bit color)
Speed	62 to 32,000 fps
Exposure rates	Global electronic shutter, speeds from 4 µsec to 1 / frame rate
File formats	Raw data (Bayer), AVI, BMP, GIF, JPEG, MPEG, TIFF
Frame storage	1024 frames at 1280 x 1024 (2 seconds record time at 500fps)
Memory upgrade	2048 frames at 1280 x 1024 (4 seconds record time at 500fps)
Power	Power via FireWire or 12 vdc power supply
Software	Image Studio for Windows XP or 2000
Standard Lenses	C-mount (1" format); includes F-mount adapter; other adapters optional
Camera Size	4.92" x 2.64" x 2.64" (125 x 67 x 67 mm)
Weight	1.65 lb (0.75 kg) including standard battery
Battery capacity	Recording mode capacity: 30 min.; stand-by mode capacity: 4 hours

Note: Specs are subject to change at any time

MotionScope M3 1.3 GB Memory - Sample Frame Rates

Resolution	Frame Rate	Number of Frames	Duration
1280 x 1024	500 fps	1024	2 seconds
640 x 512	1000 fps	4096	4 seconds
320 x 256	2000 fps	16,384	8 seconds
320 x 128	4000 fps	32,768	8 seconds
160 x 64	8000 fps	65,536	16 seconds
160 x 32	16,000 fps	262,144	16 seconds
160 x 16	32,000 fps	524,288	16 seconds

MotionScope M3 2.6 GB Memory - Sample Frame Rates

Resolution	Frame Rate	Number of Frames	Duration
1280 x 1024	500 fps	2048	4 seconds
640 x 512	1000 fps	8192	8 seconds
320 x 256	2000 fps	32,768	16 seconds
320 x 128	4000 fps	65,536	16 seconds
160 x 64	8000 fps	262,144	32 seconds
160 x 32	16,000 fps	524,288	32 seconds
160 x 16	32,000 fps	1,048,576	32 seconds

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MotionScope M3 Rev. A

