REDLAKE

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 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.

Applications: Diagnostics of high speed machinery, Process control, High speed packaging machinery, Laboratory research

Features	Benefits
Up to 1280 x 1024 resolution	High resolution to capture events even at high frame rates
Fast frame rates to 500 fps at full resolution and up to 32,000 fps at reduced resolutions	Capture dynamics of fast processes or events
Supports up to 4 seconds resolution	Extended record time for long events such animal locomotion
Global Shutter to 4 μseconds	Freeze motion photography of fast moving objects with minimal or no motion blur
Compact packaging	For constrained space applications
Internal battery	For standalone operation

Sample Frame Rates

1.3 GB Memory

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

2.6 GB Memory

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

Note: proportions are approximate

MotionScope M3 Performance Specifications

CMOS Imager	
Sensor Array	Area array with 12 µm x 12 µm pixels, Color or Monochrome
Image Resolution	1280 x 1024 at 500 fps
Dynamic Range	59 dB at sensor

Memory and Record Rates	
On-board Storage	1.3 GB and 2.6 GB models available
Recording Rates	Selectable, up to 32,000 fps
Playback Rates	7.5, 15 fps (full resolution) depending on PC

Camera Control	
Shutter	Global Electronic Shutter variable down to 4µs
Trigger Frame	Variable position from start to the maximum available frame capacity
Trigger Mode	TTL, 5V-tolerant switch closure

Software	
Control Software	Imaging Studio; Windows 2000/XP compatible
File Formats	Raw, BMP, TIFF, JPEG, AVI, GIF, JPEG, and MPEG

Mechanical Description	
Camera Dimensions	2.6 in (67 mm) H x 2.6 in (67 mm) W x 4.9 in (125 mm) L
Camera Weight	1.87 lb (6.5 Kg)
Camera to PC Interface	IEEE-1394a (Firewire)
Camera Cable Lengths	5m (firewire); optional fiber media convertor for longer distances
Battery capacity	30 min. recording and 4 hr. standby
Lens Compatibility	1" C-mount
Lens Mount	C-mount, F-mount adapter, other adapters available
Hi-G Hub Size	Dimensions and Weight: 7.87"(H) x 4.33"(W) x 2.48" (L) (200 x 110 x 63mm); Weight: <1.0 lb (<0.5Kg)
Hi-G Hub Interface	Camera/Hub Sync Unit/Control PC Network; Trigger In; Power; Sync In, Sync Out

Synchronization	
Multiple Cameras / Network	Synchronized using the Sync In and Sync Out connections. When using a high-G hub, cameras may be synchronized to an external source, or to a master camera

Environmental	
Camera Power	+8 to 16 VDC @ 12W
HUB Power	+9 to 36 VDC @ 60W
Shock Hub	100G @ 6ms min. any axis, 1000 cycles
Operating Temperature	-18°C to +45°C Ambient (0°F to 122°F)
Emissions/Safety	CE approved, FCC Class B compliant, UL listed

Input/Output	
I/O – Trigger I/O **Strobe Output (3.3V)** **Power (12V DC)** **IEEE-1394a - Firewire**	

Note: Specifications are subject to change.

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