

///MotionXtra® HG-100K

Featuring a Redlake exclusive 1.7 megapixel CMOS sensor, the *MotionXtra*® HG-100K offers a true replacement for high-speed film cameras. Capable of record rates from 1000 frames per second at full resolution, to an incredible 100,000 frames per second at reduced resolutions the HG-100K offers performance not found in any other CMOS camera.

The camera includes a fast 5 μ s global electronic shutter to eliminate motion blur and deliver razor sharp images with the high quality that you have come to expect from Redlake.

Built on the extensive feature set and proven dependability of the HG2000 and HG-TX CCD cameras, you can count on the HG-100K for reliable networking and easy to use multi-camera control. The Ethernet interface allows remote camera control and fast 1000 Base-T transfer of uncompressed file formats, including TIFF and compact Type-2 Bayer. High-quality JPEGs may be downloaded, providing excellent image quality at a fraction of the file size. AVI files using popular codecs (compressed or uncompressed) may be produced in tandem with any image download.

Designed for capturing high-speed events in harsh environments, the HG-100K system consists of three major components:

- The high-speed, rugged HG-100K Camera. A built-in battery back-up preserves the recording if a power failure occurs after the event is captured.
- An optional Hub Sync Unit, which functions both as a High-G Gigabit Ethernet switch and precision time source providing frame synchronization within +/-2.5 μ s. The Hub withstands shock up to 100G in any axis.
- *MotionCentral*™ software for camera control, and image download and viewing has intuitive control features and supports networks of one to 250 HG-100K, HG-LE and/or HG2000/HG-TX cameras.

An optional tablet style Display Control Unit (DCU) makes setup of remotely located cameras fast and easy.

While the HG-100K represents a quantum leap over the previous generation of high-speed cameras, legacy HG2000/HG-TX cameras remain fully compatible with the HG-100K system. The Hub Sync Unit includes an HG2000/HG-100+/CR/HG-TX interface to allow a mixed camera network with a single control PC and common software. This preserves the investment that you have already made in infrastructure and training.

The HG-100K is easy to set-up, easy to integrate, and easy to use. With advanced technology and an extensive feature set, the HG-100K is the most versatile high-speed camera available.

High-Speed, High-Resolution, Extraordinary Performance



S N A P S H O T

- **1.7 megapixel CMOS sensor exclusive to Redlake: 1504 x 1128 pixels**
- **1000 fps at full resolution, up to 100,000 fps at reduced resolutions**
- **Very fast 5 μ s electronic shutter eliminates motion blur**
- **Rugged design: withstands up to 100G in any axis**
- **Fast, accurate, reliable camera networking**
- **1000Base-T Ethernet® for fast downloads**
- **2 GB memory (4 GB optional)**
- **Compatible with all previous Redlake legacy cameras (HG2000/HG-100+/CR/HG-TX), and HG-LE**

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

- **Vehicle impact testing (VIT)**
- **Airbag deployment**
- **Component safety testing**
- **Research, design and test**
- **Range, aerospace and ballistics**

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PERFORMANCE SPECIFICATIONS

Sensor Array	32 channels, 1504 x 1128 pixels, CMOS Sensor
Image Resolution	Up to 1504 x 1128
Dynamic Range	62 dB at sensor and 25°C (77°F) ambient temperature
Recording Rates	Selectable 25 to 100,000 fps in 5 fps increments; variable frame rate via external source
Shutter	Global Electronic Shutter variable to 5µs
Trigger Frame	Variable position from start to the maximum available frame capacity
Trigger Mode	TTL, 5V-tolerant, user selectable polarity, or switch closure; variable debounce delay
Trigger Stamp	Each frame, selectable reference
Synchronization	All cameras are frame synchronized to a master precision clock when using optional Hub Sync Unit within +/- 2.5 µs
On-Board Storage	2 GB memory storage (4 GB optional)
Camera Size	Dimensions: 5.33"(H) x 4.15"(W) x 11.10"(L) (135 x 105 x 282mm); Weight: 11 lbs (5Kg)
Camera Interface	Camera Network (100/1000Base-T Ethernet); Sync I/O; Trigger In; Power; Strobe Out
Cable Lengths	Camera to Hub: up to 328 ft (100m); Hub to Hub/Control PC: up to 328 ft (100m)
Lens Mount	C-mount, F-mount, and High-G Box-mounts available
Hub Sync Unit Size	Dimensions and Weight: 2.16"(H) x 13"(W) x 13"(L) (55 x 330 x 330mm); Weight: 11 lbs (5Kg)
Hub Sync Unit Interface	Camera/Hub Sync Unit/Control PC Network; Trigger I/O; Power I/O; Legacy Port to connect HG D-Box or HG J-Box for multiple Legacy cameras (HG2000/HG-100+/CR/HG-TX)
Power	Camera: +20 to 50 VDC @ 40W; Hub: +20 to 50 VDC @ 50W
Shock	Camera and Hub: 100G @ 5ms min. any axis, 1000 cycles
Operating Temperature	0°C to +45°C Ambient (32°F to 113°F)
Control Software	MotionCentral. Windows 2000, XP and NT 4.0 SP6 compatible
File Formats	Type-2 Bayer, TIFF, JPEG, AVI; 8-bit mono, 24-bit color
Reticle	Full Screen Crosshair with X, Y Coordinate Display
Options	Tablet Style Display Control Unit (DCU)
Emission/Safety	CE approved, FCC Class B compliant, UL recognized (camera), UL listed (Hub Sync Unit)

Note: Specifications are subject to change.

Sample Frame Rates and Resolutions

Frames/Second	4:3*	1:1	3:1*
≤1000	1504x1128	1120x1120	1504x584
2000	1056x792	896x896	1504x488
3,000	832x632	704x704	1312x432
5000	640x480	544x544	992x328
10,000	416x320	352x352	672x216
20,000	256x192	224x224	416x136
30,000	192x152	160x160	320x104
50,000	96x72	96x96	192x64
100,000	32x24		64x24

Note: proportions are approximate

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HG-100K Rev. B