

# ///MotionXtra™ HG-100K

Featuring a Redlake exclusive 1.7 megapixel CMOS sensor (1504 x 1128 pixels), the MotionXtra™ HG-100K offers a true replacement for 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 camera includes a fast 5µs global electronic shutter to eliminate motion blur and deliver razor sharp images during the recording of extremely high-speed events.

Built on the extensive feature set of the HG2000 and HG-TX CCD-based cameras, the HG-100K delivers the high quality images you've come to expect from Redlake through a combination of exceptional light sensitivity, high resolution, and increased speed not found in any other CMOS based camera. The Ethernet interface allows remote camera control and 1000Base-T fast transfer of compact Type-2 Bayer or TIFF format images.

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
- An optional Hub Sync Unit, which functions as a High-G Gigabit Ethernet switch. The Hub Sync Unit ensures the frame synchronization of multiple cameras to within +/-2.5µs. The camera and Hub can withstand shock up to 100G in any axis.
- MotionCentral™ software for camera control, and image download and viewing. It is capable of supporting a large number of HG-100K and/or HG2000/HG-TX cameras in a dedicated camera network.

An optional tablet style Display Control Unit (DCU) makes setup of remotely located cameras fast and easy. A small back-up battery is included within the camera to preserve the recording should a power failure occur after the event.

While the HG-100K is a quantum leap ahead of the previous generation of high-speed cameras, legacy HG2000/HG-TX cameras are compatible with the HG-100K system to preserve your investment. The design of the multi-camera 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.

## 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 5µs 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**
- **Compatible with all previous Redlake legacy cameras (HG2000/HG-100+/CR/HG-TX)**

### 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

<b>Sensor Array</b>	32-Channel, 1504 x 1128 pixels, CMOS Sensor
<b>Image Resolution</b>	Up to 1504 x 1128
<b>Dynamic Range</b>	62 dB at sensor and 25°C (77°F) ambient temperature
<b>Recording Rates</b>	30, 60, 125, 250, 500, 1000 Full fps; Up to 100,000 partial fps; variable frame rate via external source
<b>Shutter</b>	Global Electronic Shutter variable to 5µs
<b>Trigger Frame</b>	Variable position from start to the maximum available frame capacity
<b>Trigger Mode</b>	TTL, 5V-tolerant, user selectable polarity, or switch closure
<b>Synchronization</b>	All cameras are synchronized to a master precision clock when using optional Hub Sync Unit within +/- 2.5 µs
<b>On-Board Storage</b>	2GB memory storage
<b>Camera Size</b>	Dimensions: 5.33"(H) x 4.15"(W) x 11.10" (L) (135 x 105 x 282mm); Weight: 11 lbs (5Kg)
<b>Camera Interface</b>	Camera Network (100/1000Base-T Ethernet); Sync I/O; Trigger In; Power; Strobe Out
<b>Cable Lengths</b>	Camera to Hub: up to 328 ft (100m); Hub to Hub/Control PC: up to 328 ft (100m)
<b>Lens Mount</b>	C-mount, F-mount, and High-G Box-mounts available
<b>Hub Sync Unit Size</b>	Dimensions and Weight: 2.16"(H) x 13"(W) x 13" (L) (55 x 330 x 330mm); Weight: 11 lbs (5Kg)
<b>Hub Sync Unit Interface</b>	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)
<b>Power</b>	Camera: +20 to 50 VDC @ 40W; Hub: +20 to 50 VDC @ 50W
<b>Shock</b>	Camera and Hub: 100G @ 5ms min. any axis, 1000 cycles
<b>Operating Temperature</b>	0°C to +50°C Ambient (32°F to 122°F)
<b>Control Software</b>	MotionCentral. Windows™ 2000, XP and NT 4.0 SP6 compatible
<b>File Formats</b>	Type-2 Bayer, TIFF, JPEG; 8-bit mono, 24-bit color
<b>Reticle</b>	Full Screen Crosshair with X, Y Coordinate Display
<b>Options</b>	Tablet Style Display Control Unit (DCU)
<b>Emission/Safety</b>	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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