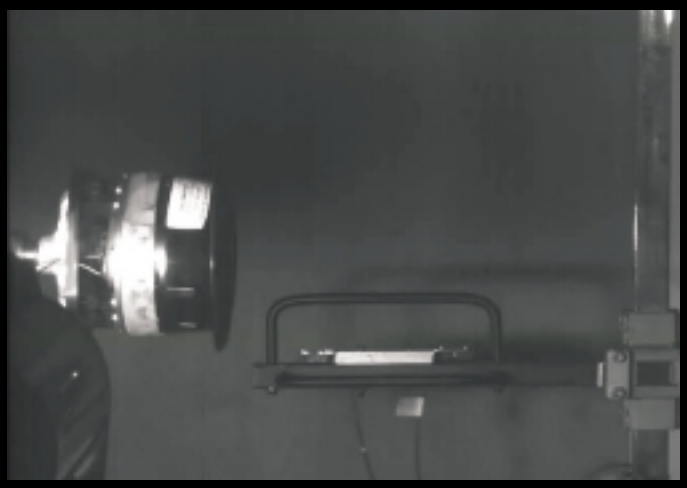
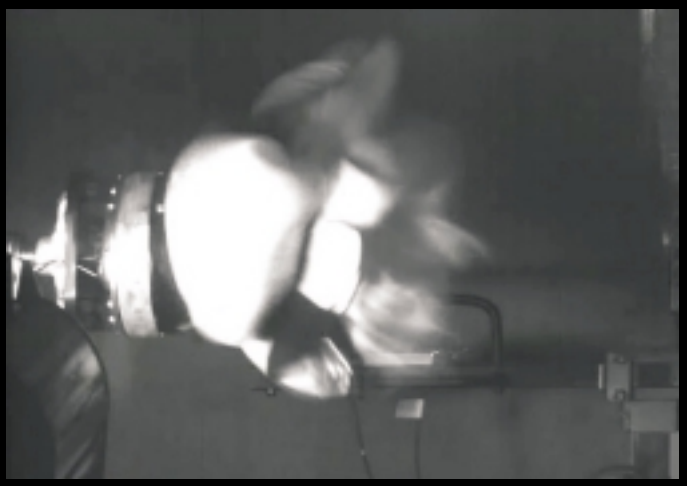
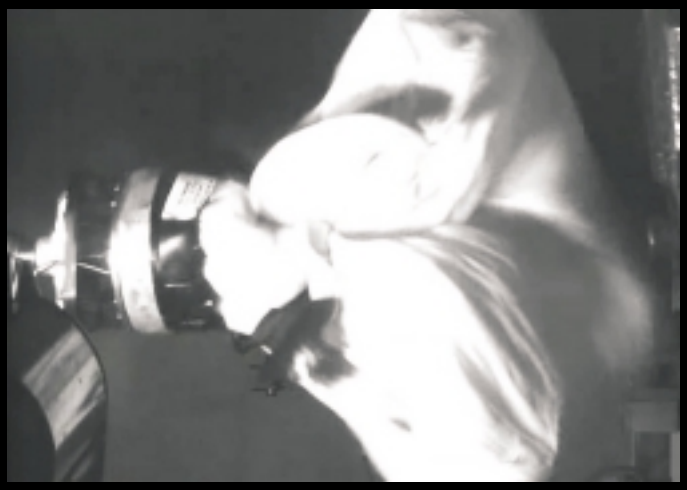
# 2007

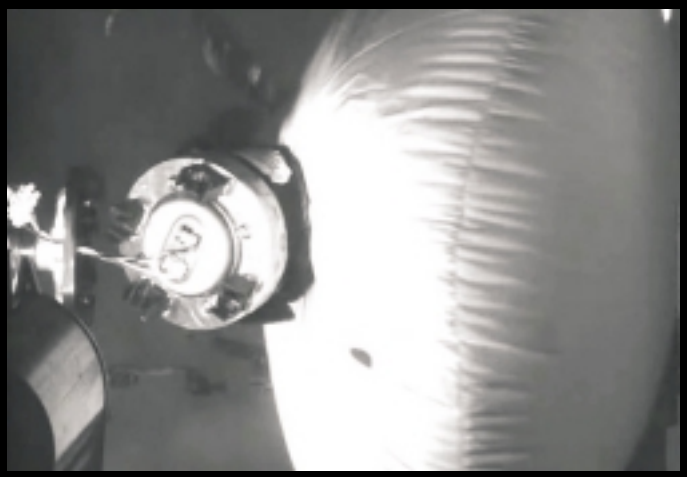
# MEGASPEED

MS1000, MS4K, MS10K, MS400K, MS25K, MS30K, MS30K DVR, MS50K, MS55K, MS70K & MS80K









# HIGH SPEED CATALOGUE

45 Main Street South Minnedosa, Manitoba, Canada R0J 1E0

Post Office Box 1560 www.cplab.com phone 1.204.867.3141 fax 1.204.867.3927

# Mega Speed CCD & CMOS Cameras

The Mega Speed series of CCD & CMOS cameras are capable of recording speeds from 1 fps to 100,000 fps in continuous mode and over 400,000 fps in burst mode.

## Continuously Capture Up to 100,000 FPS!




MS 55K

- Standard “C” or “F” Mount Interface
- Giga Bit Ethernet Connectivity
- B/W & Color Models Available
- Easy Operation & Quick Set Up
- Compact & Light Weight Design
- Quantum Efficiencies Of Up to 70%
- High Resolution Linear Imaging Surface
- Several High Speed Models Available up to 400K fps
- Powerful Full Feature Image Capture Software Included

### Product Description

The Mega Speed Digital Camera System is a high performance, high speed digital camera for use in several machine vision, packaging, industrial & scientific imaging applications.

Some of the many advantages of the Mega Speed System are the cameras small form factor, easy connectivity, robust design & high picture quality.

A software package comes with each system that allows control of several camera functions like frame rate, frame size, shutter speed, trigger type, playback rate, forward, reverse, single frame advance, loading & saving files, various set-up commands & the ability to automatically follow user defined capture and download, save and re-arm sequences.

### Design Features

The Mega Speed Digital Camera System is very small and compact which allows easy integration and placement into all types of imaging environments. The universal “C” Mount on the front of the camera body allows a simple connection to be made to any “C” Mount lens. This mounting method allows end users to use readily available lenses.

The Standard Mega Speed Digital Camera System uses a Personal Computer Interface slot (PCI) to interface with any 500 Mhz computer for outstanding flexibility and ease of use. Complete turn key packages are also available which includes a pre-setup computer, camera cables, software, power supply and lighting.

### Up to 4 capture modes in each camera!

The Mega Speed cameras are capable of capturing outstanding detailed images by either running in the continuous capture, capture by trigger, asynchronous reset or by capturing in the burst mode.

### Performance Features

The Mega Speed digital camera system comes complete with every performance feature one might expect from a professional grade imaging system. Some of these features include Ethernet connectivity, low noise readout, high quantum efficiency & high dynamic range.

The Mega Speeds are available in 8 bit b/w or 24 bit color.

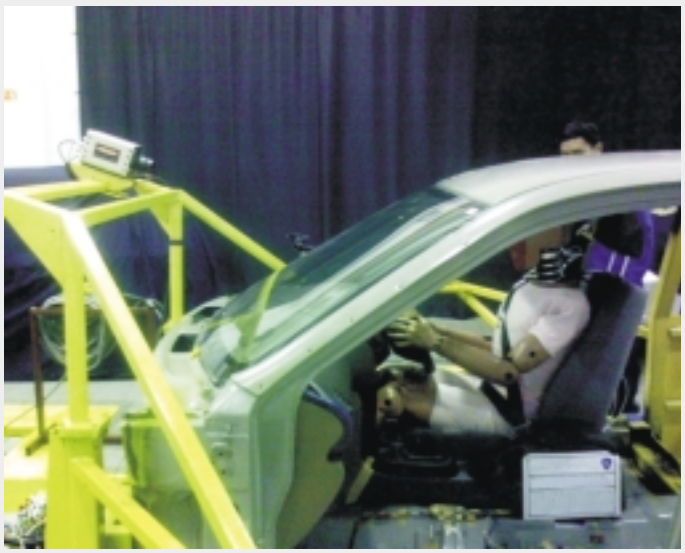
Image acquisition is accomplished by either direct digital data transfer to your PC or through on board camera RAM. Once images are captured they are sent to your PC where detailed image analysis can be preformed. Data is transferred via a high speed cable directly to your host PC’s RAM in real time, ready for instant viewing with hundreds of image sizes to suit your capture needs.

Several camera options are available including models that will deliver from 1 fps to 100,000 fps. For extremely high speed events, cameras are available with burst rates of over 400,000 fps. To determine the best camera for your individual application, please feel free to speak to our application engineers for an exact camera recommendation.

**Specifications Subject To Change Without Notice.**

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# Powerful Image Capture Software



High Speed Crash Test With The MS50K

The High Speed Imaging Software is a powerful but easy to use image capture program which easily lets you take your video and quickly identify, diagnose and correct your problem.

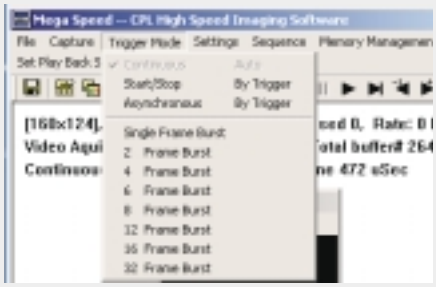
Images are transferred to your PC in real time as they happen or stored in on board camera RAM.

.

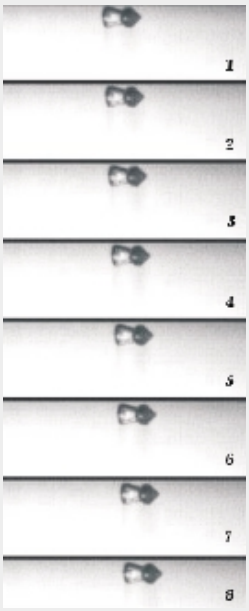
Camera adjustments like gain settings and integration times and zoom ratios can be made "on the fly" allowing you to take a perfect video sequence every time. (Model Dependant)

After your capture is stopped, the video sequence is immediately available for playback and image analysis. Multiple thumb nail pictures can be opened both before and after the presently displayed image in your captured sequence for analyzing the entire event at a single glance.

The High Speed Imaging Software is so powerful it allows selection of any image size from 640 x 480 right down to 32 x 22 when used with our CCD cameras and from 2300 x 1700 to 16 x 10 when used with our CMOS cameras. Integration times can be set with the click of a mouse from 1us up to 25,000 us in 1 us steps, effortlessly producing sharp crisp videos.




Flexible image capture modes are all just one mouse click away. Choose from continuous capture, continuous capture by trigger, asynchronous capture by trigger, segmented memory mode or any one of the available burst modes. (Model Dependant)




**Left:**

8 successive frames of a high speed pellet moving from left to right. The video was taken in the 8 frame burst mode at a speed rate of 62,000 frames per second. Integration time was 10us. Two 75 watt halogen lamps 5 in. away from the pellets were used. The pellets are 0.320 L x 0.220 W.

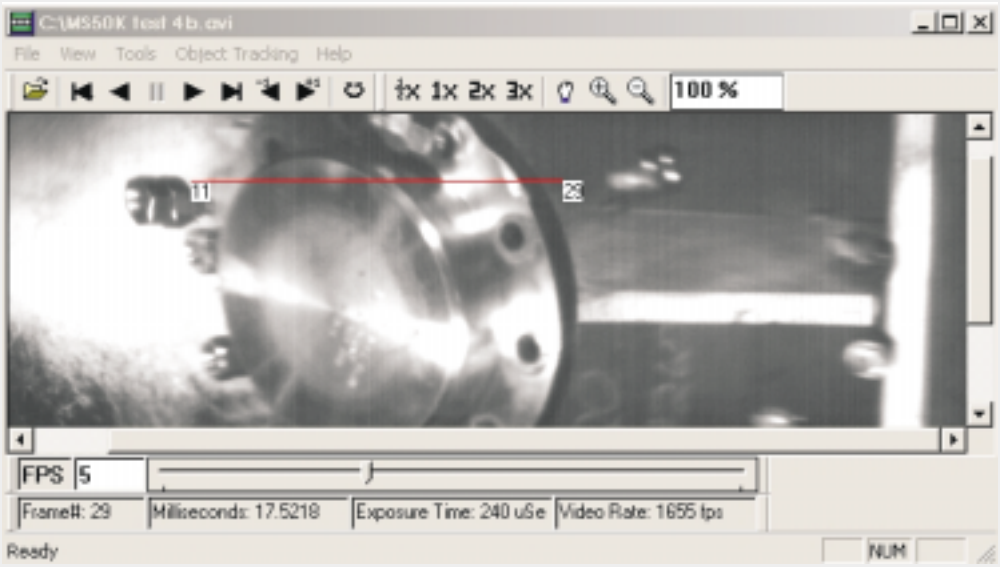
**Right:**

High Speed video taken with the MS55K camera. The video capture speed was 1000 fps and the image size was 1280 x 1020.




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# Mega Speed Object Tracking




High Pressure Bulk Head Explosion Test With The MS55K

## Report Generation

Quickly track velocity, distance and RPM with the object tracking features that are available with all versions of the Mega Speed software.

The data on the report sheet can also be exported to external files for future reference. Two file formats are available for exporting. They are xls Excel files and txt notepad file formats. Simply click on "Export to Excel" to export data to a "MegaSpeedTrack.xls" file or "Export to TXT" to a "MegaSpeedTrack.txt" file!

Microsoft Excel - MegaSpeedTrack.xls

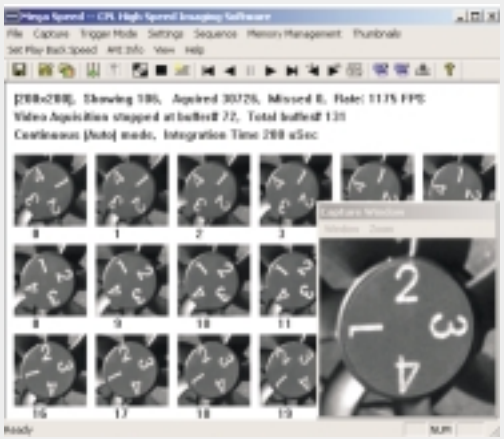
File Edit View Insert Format Tools Data Window Help

MS Sans Serif 10 B

A1 = 'From frame

| | A | B | C | D | E | F |
|---|---|---|---|---|---|---|
| 1 | From frame | To frame | Distance | Average Speed | RPM | |
| 2 | 14 | 19 | 84.66 mm / 0.085 m | 28.02 m/s / 62.70 mph | | |
| 3 | 19 | 23 | 73.76 mm / 0.074 m | 30.52 m/s / 68.29 mph | | |
| 4 | 23 | 27 | 81.96 mm / 0.082 m | 33.91 m/s / 75.88 mph | | |
| 5 | 27 | 30 | 64.79 mm / 0.065 m | 35.74 m/s / 79.97 mph | | |
| 6 | 14 | 30 | 305.17 mm / 0.305 m | 31.57 m/s / 70.63 mph | | |
| 7 | 10 | 24 | | | 1773.30 | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |

Sample AVI File Report

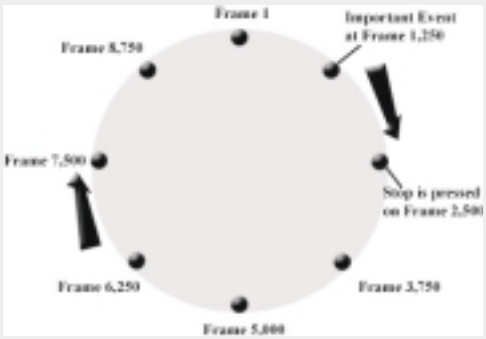


Thumb nail pre-views on the MS4K CCD camera software lets you quickly review your video file.

Simple review your AVI file in the capture window and then click on the thumb nail IKON. They are instantly updated for your quick and easy reference.

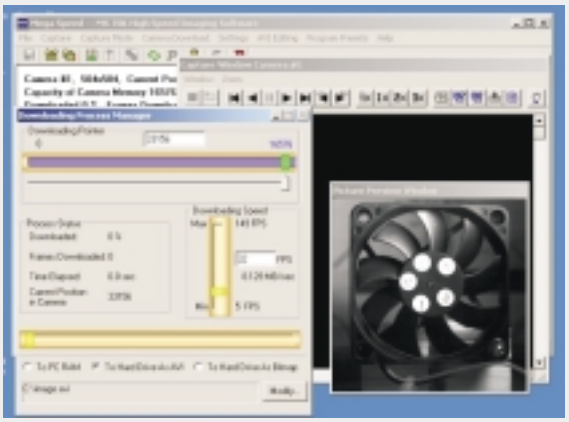
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# Mega Speed Data Acquisition



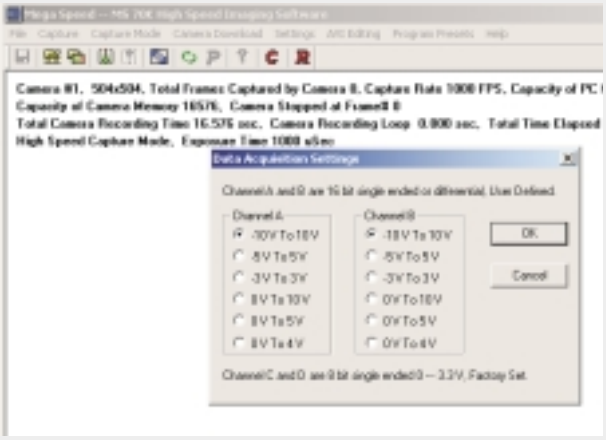

## MS70K Internal SDRAM Structure

The camera's internal memory constantly loops through during high speed capture.



## Download Process Manager

After capture the MS70K's Download Process Manager makes finding your files a breeze!



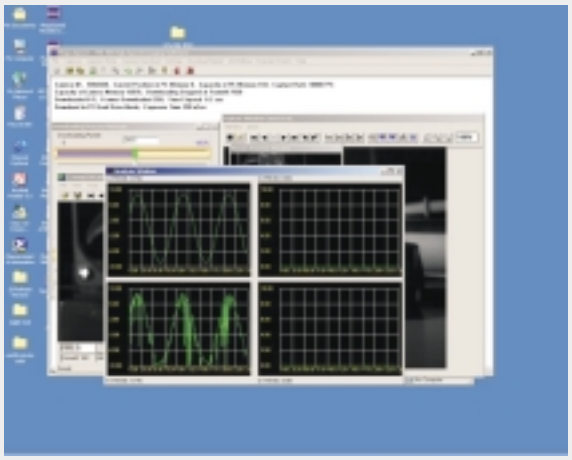
## Data Acquisition Sensor Selection

Select your sensors out put voltage range through easy drop down menus.



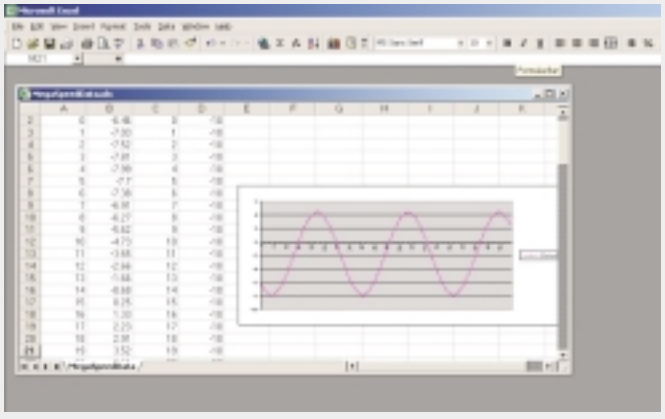
## Data Acquisition Graph Selection

After taking your data, name your graph axis to match your test parameters. ( PSI, force, temp etc )



## Data Acquisition Review

Step through your data and simultaneously watch your high speed video.



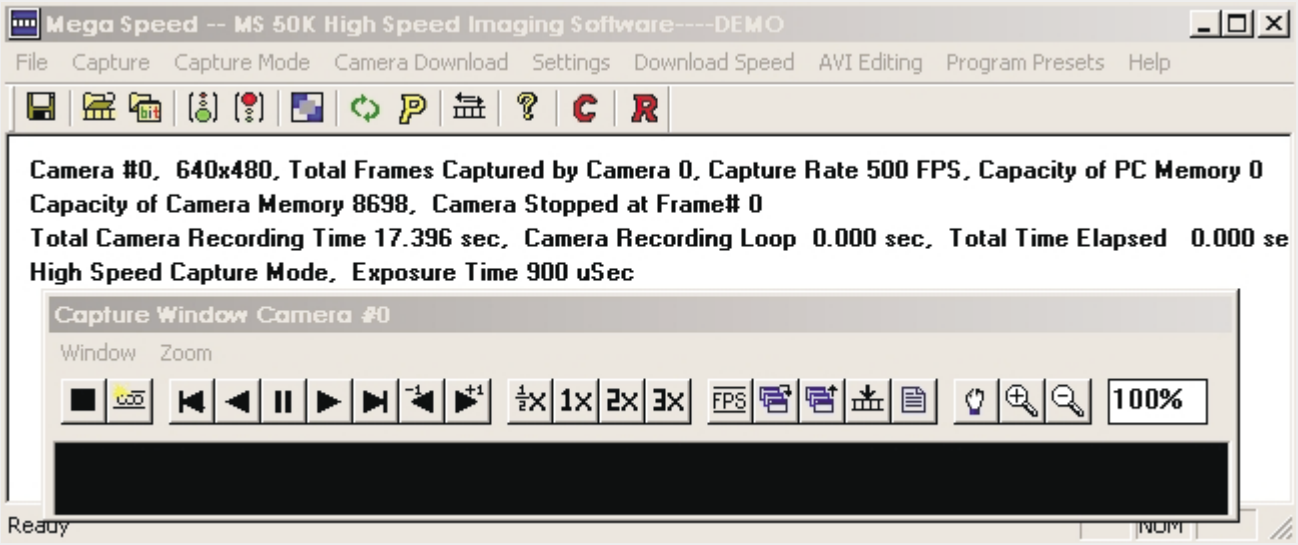
## Data Acquisition Report Generation

After review your data is ready to be exported to your spread sheet for further documentation.

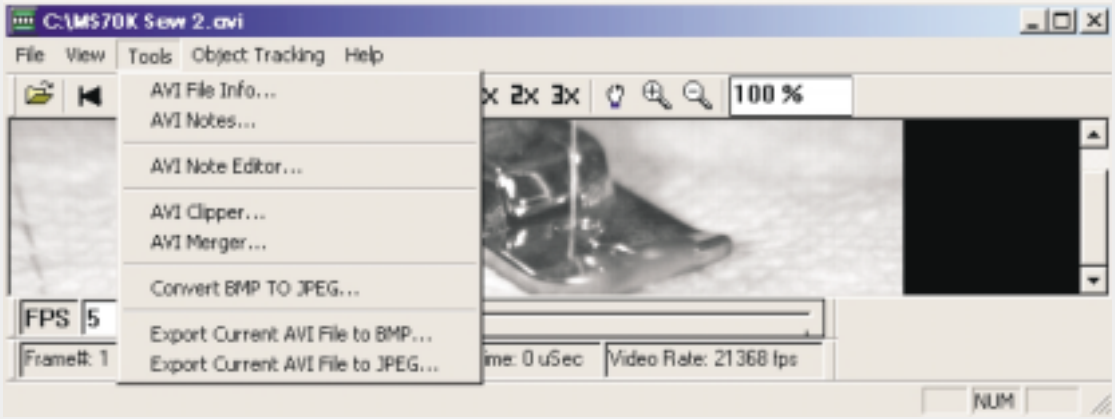
Specifications Subject to change with out notice.

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# Dynamic Full Feature Software




The versatility of the Mega Speed MS50K, MS55K, MS70K and the MS80K software lets you take control of your high speed imaging application under any condition, anywhere, anytime. Numerous trigger options, memory sizes, frame rates, connectivity options, & software automation features guarantee you will save both time and money when you purchase any Mega Speed camera.




High Speed Needle Test At 21,000 fps

With the Mega Speed's built in AVI editing features you can easily dictate notes and attach them to your video files for future reference. With these AVI editing features it is easy for the user to cut and snip important sections of longer AVI files for a quick review later or to share with a co-worker.
Several short files can later be joined together for reporting purposes or file storage. The user can also export a specific frame or the entire AVI file to BMP or JPG formats for compatibility with other software applications. Plus all current AVI file information is only a click away. View file length, image size, video rate, exposure time, gain value plus several other important AVI details by simply selecting the "AVI File Info" menu option from the menu bar.

For additional information, please feel free to contact our sales office and ask for our application engineers. They will be happy to assist you in any future high speed imaging projects.

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*No More Jammed VHS Tapes!*

# Mega Speed DVR 30K

*100% Digital!*

## PORTABLE DOUBLE FUNCTION HIGH SPEED DIGITAL VIDEO RECORDER



- Excellent Progressive Scan Image Quality
- Double Resolution Compared to VHS Tapes
- Rapid File Retrieval Even While Recording
- Ethernet Link To Other PC's For File Sharing
- Solid State & Digital Disk Drive Technology
- Internal 250 Gigabyte Back Up Storage
- Large 20" Built In TFT Monitor

*Capture 1000 FPS for 50 Minutes*

**Full DVR Control From Up To 60 Kilometers Away With Our Fiber Optic Link.**




*Mega Speed DVR Camera Head.*

## PRODUCT SPECIFICATIONS

| | |
|---|---|
| Sensor type: | Mega Speed B/W or Color CMOS Sensor. |
| Maximum resolution: | 1280 x 1020 |
| Pixel size: | 12um x 12um. |
| Shutter speed: | Global Electronic Shutter 1us to 20 ms in 2 us steps. Image size dependant. |
| Spectral response: | 400nm to 1000nm. |
| Trigger: | TTL 3 to 5 VDC via BNC connector center pin positive active high. |
| Trigger modes: | Start by TTL, stop by TTL. |
| Strobe out: | BNC Jack. TTL 3 to 5 VDC via BNC connector center pin positive active high. |
| Camera size: | 4" x 4"x 6". |
| Camera weight: | 1400 grams. Model dependent. |
| Camera cable: | User specified up to 60KM |
| DVR Recorder | 20 x 14 x 9 inches & 20 KG( Specification Subject To Change Without Notice) |
| Multiple cameras | Up to 5 or more cameras per DVR. Application Specific. Consult Sales Rep. |
| Video output: | High Speed data to host DVR & NTSC or PAL video out. |
| Ethernet: | 10 / 100 / Gigabit connectivity. Model dependent. |
| Preview mode: | VGA & NTSC / PAL preview during high speed capture. |
| Camera speeds: | User defined in Software in one FPS increments. |
| Optical interface: | Standard "C" Mount or "F" Mount. |
| Back focus: | Approximately 17.5mm from sensor surface to outer face of thread barrel. |
| Power requirements: | 6 V DC Center pin positive. |
| Gain adjustments: | User selectable from software. |
| Image sizes: | User selectable from factory defaults or by software selection. |
| Capture modes: | Auto-matic or manual modes. Start/stop by trigger or hot keys. |
| File saving: | User can save in AVI format, JPEG or BMP format to DVR.. |
| Image enhancement: | Bitmaps can be sharpened to bring out better details in captured files. |
| Record Time: | Up to 50 Minutes at full DVR Speed |
| Storage Media: | Dual Storage. Solid State And High Capacity Digital Disk Drive. |
| Data back up: | Back up to a 250 gigabyte internal hard drive or written to DVD. |
| Playback rate: | User selectable from 1 to 1000 fps for fast video review. |
| Software: | Image analysis, object tracking, velocity, AVI editing, note tagging & image compression. |
| Shock rating: | 10G for Industrial environments. |



*Multiple Channel Data Acquisition Synchronized To Each Frame Right On Board The Camera.( MS70K )*

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# Mega Speed Connectivity

**Numerous connectivity options are available to connect our cameras to your PC or Laptop. Even without the presence of a PC, our cameras can record and save your valuable high speed data. These features allow select Mega Speed cameras to move as freely as you do without the bulk of a desk top PC limiting your capturing capability. With several Giga Bytes of both high speed camera RAM and Flash RAM at your disposal, you will make it through the toughest field test with flying colors.**



*Ships With Easy Install Gig E or LVDS Capture Cards & Cable Lengths From 5M to 30 KM.*



*PCMCIA and 10 / 100 / Gigabit Ethernet Connectivity For Portable use.*



*Mega Speed Key Pads For Stand Alone Applications.*



*Optional PCMCIA Expansion Box*




*Mega Speed Storage and Transportation Hard Carry Cases.*

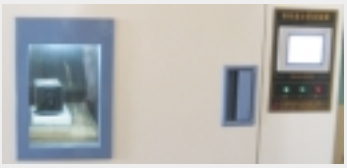



*Mega Speed MS50K*

*Several other Mega Speed connectivity options are available such as VGA NTSC, PAL, frame markers, trigger options, strobe signals options, IRIG timing, frame stamping, multiple session recording and automation recording features.*

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# Specification Brief



Extreme Temperature
Tested From -40° to +50°C

email sales@ cplab.com
for full product specifications,
frame rates, memory & model
options.






Air Bag Testing

## PRODUCT SPECIFICATIONS

### CPL-Mega Speed Series CCD Cameras

- Sensor type: CCD Frame transfer.
- Maximum resolution: 640 x 480.
- Frame rates: 1 to 10,000 fps continuous & 1900 to 418,000 fps in burst mode.
- Shutter speed: 1us to 24 ms in 1 us steps.
- Spectral response: 400nm to 1000nm.
- Quantum efficiency : Typically 65% at 530nm.
- A-D converter: 8 bits.



Jet Engine Testing

### CPL-Mega Speed Series CMOS Cameras

- Sensor type: Mega Pixel CMOS Sensor.
- Maximum resolution: 504 x 504, 640 x 480, 1280 x 1020 or 2300 x 1700
- Frame rates: 1 to 100,000 fps variable rate capture control. Model dependant.
- Down load: Variable rate download control through software.
- Shutter speed: 1us to 30 ms in 1 us steps. Image size dependant.
- Spectral response: 400nm to 1000nm.
- Quantum efficiency : Up to 50% at 500nm.
- A-D converter: 10 bits.



Ballistic Testing

### Features Common To Both CCD & CMOS Models

- Trigger & Strobe: TTL 3 to 5 VDC via BNC connector center pin positive active high.
- IRIG B: Model dependant
- Flash RAM: Model dependant
- Camera cable: 5 meters standard, 10 to 100 meters available.
- Optical interface: Standard “C” mounts with “F” mounts available.
- Back focus: Approximately 17.5mm from sensor surface to outer face of thread barrel.
- Speed control: Variable rate control through software.
- Gain adjustments: User selectable through software.
- Image sizes: User selectable from factory defaults or by manual selection.
- Capture modes: Automatic or manual modes. Start/stop by trigger or hot keys.
- File saving: User can save in AVI format, BMP or JPEG format to PC RAM or hard drive.
- Image enhancement: Bitmaps can be sharpened to bring out better details in captured files.
- Memory allocation: User can add or allocate PC memory as required.
- Frame marking: Last frame in captured sequence is identified for quick & easy reference.
- Playback rate: User selectable from 1to1000 fps for fast video review.

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