

# V4.0 Specifications



## IMAGER

*Standard features include:*  
High-g configuration  
High speed image capture  
Continuous recording  
Pre-trigger recording  
Post-trigger recording  
On chip shutter  
Auto exposure  
Strobe sync  
Integral image memory\*  
Continuous video viewfinder  
IRIG-B timing capture  
FireWire™ digital interface  
for local or remote system control  
of multiple cameras

### Sensor:

512 x 512 pixel, SR-CMOS color  
or monochrome array

**Pictures per Second (PPS):** Full sensor:  
to 1000 PPS

**Allocated formats:** to 32,000 PPS

### Exposure Time:

Variable, independent of sample rate  
(PPS), to 10 microsecond

### Post Trigger:

Continuously variable

### Imager Controls:

Via FireWire™ digital interface, or  
optional RS422 serial interface

### Viewfinder and Focusing:

Via continuous video viewfinder, or  
laptop S-VGA monitor

### Lens Mounts:

1" C-Mount standard.  
Many other lens mounts available,  
including Nikon and Photo-Sonics  
Hi-G lens mounts

**INPUTS** (via integrated quick-release  
connector\*):

**Start Trigger:** TTL pulse, or switch  
closure.

**Sync Image:** TTL pulse

**IRIG-B Timing:** IRIG-B code

**Power:** 28VDC/1 Amp.

**OUTPUTS:** (via integrated quick-  
release connector unless other wise  
noted\*):

**Strobe Sync:** TTL pulse.

**Network:** Via FireWire™ digital  
interface (IEEE 1394)

**Auto-Iris:** (Circular 4-pin)

**Display:** Continuous video viewfinder  
NTSC/PAL

## MEMORY

**Standard:** 256 Megabytes integral  
image memory. Records 1,024 images  
for 1 second of continuous recording  
at 1000 PPS, full format. Longer  
recording times for lower sample rates  
and allocated formats. (example: 10  
seconds at 100 PPS)

**Optional:** (1Q/2000) Up to 512  
Megabyte integral image memory.  
Records 2024 images for 2.0 seconds  
continuous recording at 1000 PPS, full  
format. Longer recording times for  
lower sample rates and allocated  
formats. (example: 20 seconds at 100  
PPS)

**Optional:** (1Q/2000) Non-Volatile  
Flash Memory, up to 1 gigabyte, is also  
available

## ENVIRONMENTAL

100g up to 10 millisecond  
50g up to 100 millisecond  
Three axis

## SOFTWARE

*Phantom® operates in a Windows™  
environment with familiar commands  
found in familiar places. Standard  
functions include:*

**Acquisition:** Image capture, IRIG-B  
timing capture & standard time  
annotation. Field of view & focus.  
Sample rate & aspect ratio selection.  
Shutter speed. Histogram. Brightness &  
contrast adjust. Trigger modes. Con-  
tinuous record. Save & recall setups.

**Analytical playback:** Immediate  
playback of ciné. Variable playback  
speeds in forward or reverse, including  
freeze frame & endless loop. Random  
Go-to-Image. View single images at  
random from any cine'. Tile/cascade  
multiple images on one screen. Timing  
data displayed with each image. Ciné  
editor.

**Measurements:** Linear or angular  
measurements. Displacement. Velocity.  
RPMs. 100 data points per image.  
English and metric units. Generate  
measurement reports. Report files &  
images are compatible with spread-  
sheet software, and image analysis  
software such as TrackEye® or Image  
Express®.

**Image processing:** Smooth, sharpen,  
pseudocolor, negative image, and edge  
detection. Brightness, contrast &  
gamma adjust. 3x3 and 5x5 filter  
matrix for custom image processing.  
Unprocessed original ciné is saved as a  
separate file.

**File management:** Organize, save,  
compress and export cinés, or single  
images. File formats are compatible  
with most word processing, desktop  
publishing, and presentation software.

## DIMENSIONS

**Size:** 4x3x8 inch (HWD)  
(10x7.5x20 cm) (HWD)

**Weight:** 4.5 lbs (2.0kg)

**Power:** 28VDC/ 1Amp

**Mounting:** 1/4-20 inch and four 10-32  
threaded hole pattern in base and top\*

**Mounting Axis:** Any position

**Material & Finish:** Aluminum housing.  
Choice of painted colors.

**Country of Origin:** The United States of  
America

## STANDARD ACCESSORIES

Phantom® software. Single user  
license\*

256 Megabyte integral image memory

FireWire® digital interface. Sync output  
pulse. Sync Image input.

110/220VAC-28VDC International  
Power Adapter. 12 foot (3.7 m) power  
cord

Operators Manual. All documentation.  
One year warranty.

## QUESTIONS?

For technical assistance, systems  
integration, custom options, or  
information on imaging techniques,  
please call us toll free: 1 .800.RESOLU-  
TION (USA & Canada 1.800.737.6588)

For the most up-to-date information,  
specifications and options, please visit  
our website:

**www.visibleolutions.com**

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R E S E A R C H

(\*Other options available.) Phantom is manufactured in the USA under US patent Number 5625412. Phantom® is a registered trademark of Vision Research Inc. FireWire® and the FireWire Logo are registered trademarks of Apple Computer Inc. Windows™ and the Windows logo are trademarks of MicroSoft Corporation.

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