

phantom® digital high speed imaging systems



CAMERA LINE CARD



CAMERA LINE CARD

Line Card



THE POWER of ONE™

Whether you're searching for lightweight materials five times stronger than steel, exploring environmental qualities of hydrogen fuel, studying bio-mechanical behaviors, or discovering the unknown properties of atomic structures, **your discovery can have extraordinary impact.**

Whatever your field of exploration, **Phantom cameras can help you discover the potential of your ideas.** Phantom is a totally digital high speed imaging system capable of recording thousands of pictures per second.

The two main components of the system are the **Phantom imagers with advanced CMOS sensor technology, and the Phantom software.** Together they form a system that provides high speed, high resolution image capture in a digital cine format, with analytical digital cine playback, measurement tools, and communications across multiple digital and analog protocols.

This summary can help you choose which Phantom camera best fits your field of exploration. Maybe you need the proven performance of the rugged Phantom v4.3, or perhaps the highest sample rates of the Phantom v7.3, or possibly the ultimate in spatial resolution found in the Phantom v10.0.

Still not sure? Don't worry. Just request a free, no obligation, on-site demonstration **to see first hand which Phantom camera best meets the challenges of your application.**

Every Phantom camera features the Power of One, so no matter which Phantom camera best matches your application, sample rates can increment in one picture per second¹ steps, and exposure times increment in one microsecond steps. No pre-sets mean **you are free to explore** on your own terms.

Call us when you're ready to discover the **Power of One**

¹. pps = pictures per second



Phantom Digital Widescreen Cinema™

The genesis of the Phantom 65 camera is our fifty five years of designing film and digital high speed cameras. Beginning in 1950 with 16mm high speed rotating film cameras and later introducing the first small format CMOS color sensor² technology for high speed cameras, Vision Research is now **advancing the definition of digital widescreen cinema.**

The Phantom definition of widescreen cinema includes **medium and large format CMOS sensors with the look and depth of focus of film**, wide tonal ranges, and creative control over frame rates and exposure times. Whether you're shooting for live broadcast, commercial studio or cinema, your work flow just got easier with Phantom cameras that feature HD-SDI outputs and SMPTE time codes, and an array of options such as video viewfinders, hot-swap flash magazines, and real-time outputs. Your favorite medium and large format lenses, matte boxes, filters, focus followers, and tripods are fully compatible with the Phantom HD and the Phantom 65 cameras.



Phantom HD

The Phantom HD is designed to meet the specifications of the new media of digital high definition broadcast and widescreen cinema. The Phantom HD with a **medium format 2.0 megapixel sensor** (24mm x 13mm) provides a **digital, high resolution alternative to 35mm film cameras.** The Phantom HD's 11-bit sensor with a contrast ratio of 2048:1 achieves a wider tonal range than either film negative (128:1) or video (32:1). The Phantom HD captures up to **1000 full format fps** and features a progressive shutter with a **two microsecond exposure time.**



Phantom 65

The Phantom 65 is the newest camera designed to meet the specifications of digital widescreen cinema. At the heart of the Phantom 65 is an **extraordinary large format 10.0 megapixel sensor** (51mm x 23mm) that provides a **digital, high resolution alternative to 70mm film cameras**. The Phantom 65's 11-bit sensor with a contrast ratio of 2048:1 achieves a wider tonal range than either film negative (128:1) or video (32:1). The Phantom 65 captures up to **120 full format fps** and features a progressive shutter with a **two microsecond exposure time**. The Phantom 65 is form factor and pin compatible with the Phantom HD.



Phantom v10.0

The Phantom v10.0 offers **the ultimate in spatial resolution in a ruggedized, test range ready configuration**. The **medium format 4.3 megapixel sensor** captures **480 full format pps** on a 2400 x 1600 active pixel SR-CMOS sensor array. Select a color or monochrome sensor. Standard pixel depth is 8-bit per color, with selectable 14-bit depth available as an option. The Phantom v10.0 features a global shutter with a two microsecond exposure time. **Real-time output** is an available option for extended recording times and continuous streaming to large storage arrays like the Vision Research Image³. For seamless change-ups, the Phantom v10.0 is **pin compatible** with the Phantom v5.1, v7.1, v7.2, v7.3, v9.0 and v9.1 cameras.



High Sample Rates, High Resolution

Developed with our **most advanced SR-CMOS sensors** ever, these newest Phantom cameras introduce all the features you've been asking for. From the one megapixel Phantom v5.1 to the low-light sensitive Phantom v7.3, or the HD broadcast format Phantom v9.1, all three cameras employ the same form factor and are pin compatible for seamless change-ups when you're faced with changing project specs. Thinking about expanding your existing network of Phantom cameras? These newest cameras are fully compatible with the entire family of Phantom cameras.



Phantom v5.1

The Phantom v5.0 was the world's first high speed imager to achieve **1000 full format pps at megapixel resolution**. Like its predecessor, the Phantom v5.1 remains the favorite choice when resolution, speed and cost need to be perfectly balanced. Standard pixel depth is 8-bit per color. The global shutter with a five microsecond exposure time is standard, and a two microsecond shutter is an available option.



Phantom v7.3

The Phantom v7.3 combines **extended sensitivity, sample rates to 6688 full format pps, and a two microsecond global on-chip shutter**. The fastest Phantom also boasts the highest sensitivity with **800 x 600 active pixels** on a SR-CMOS sensor array. Standard pixel depth is 8-bit per color, with selectable 14-bit depth available as an option. The Phantom v7.3 features a global shutter with a two microsecond exposure time as standard; a one microsecond shutter is an available option. **Real-time output**, for **extended capture**

times and continuous streaming to large storage arrays like the Vision Research Image³, is an available option.



Phantom v9.1

Scientists are well known for capturing astounding and compelling images. When your next project requires HDTV resolution, select the Phantom v9.1 for the combination of **HD broadcast resolution, extended sensitivity, and sample rates to 1000 full format pps**. The **two megapixel sensor** contains 1632 x 1200 active pixels on a SR-CMOS sensor array. Standard pixel depth is 8-bit per color, with selectable 14-bit depth available as an option. The Phantom v9.1 features a global shutter with a two microsecond exposure time. **Real-time output** is an available option for continuous streaming to large storage arrays like the Vision Research Image³.

Special Applications

When survival is at the top of your list of priorities, choose the proven performance of the Phantom v4.2, the Phantom v4.3, or the multi-camera Phantom v6.2e.

Rated to withstand 100g's and untethered, these low power cameras are often selected for on-board crash sled testing and military airborne applications. One-inch C-mount lenses, configured for high-g use, are available in a variety of focal lengths.

Because even more important than camera survivability is **data survivability**, each Phantom camera offers you the option of non-volatile flash memory integral to the camera. Like all Phantom cameras, each of these cameras can be user-configured for continuous unattended and untethered operation³.



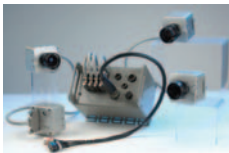
Phantom v4.2

The affordable Phantom v4.2 features a 512 x 512 pixel CMOS sensor, **captures 2100 full format pps**, and is available with either color or monochrome sensor. Ruggedized configuration is standard; high-g and airborne configurations are available options.



Phantom v4.3

The Phantom v4.3 provides **increased spatial resolution and low-light sensitivity** with its 800 x 600 pixel CMOS sensor. Using the same form factor and pin compatible with the Phantom v4.2, the Phantom v4.3 makes upgrades seamless when the project specs higher resolutions. It captures 1000 full format pps, with your choice of color or monochrome sensor. Ruggedized configuration is standard; high-g and airborne configurations are available options.



Phantom v6.2e

Each camera in the **multi-camera Phantom v6.2e** system features a 512 x 512 pixel CMOS sensor and captures 1400 full format pps. Configure one to four cameras per system and select color or monochrome sensors. The elfin 15 x 15cm cameras are connected to the controller with 3, 5, or 7 meter cables for a total system reach of 14 x 14 meters. Ruggedized configuration is standard; high-g and airborne configurations are available options.



Questions? We're happy to help : -)

Vision Research Inc.

100 Dey Road

Wayne New Jersey 07470

USA

p: 1.973.696.4500

f: 1.973.696.0560

tf: 1.800.RESOLUTION
1.800.737.6588

Toll Free USA & Canada

www.visionresearch.com

