



**VISION RESEARCH
PHANTOM V611
HIGHSPEED CAMERA**

**AIMED
RESEARCH**



Phantom v611 Highlights:

High-Definition 1280x800

1 Million FPS Max Frame Rate

Sub- μ s Exposures

Phantom CineMag Compatible

Direct Compatibility With National Instruments X and M Series Devices

Phantom v611 Features:

- 1280x800 CMOS Sensor with 20 μ m pixel size, selectable 8 or 12 bit image depth, and continuously adjustable resolution in 128x8 increments.
- Up to 6,269 frames per second at full 1280x800 resolution and up to 1 million frames per second at 128x8 resolution. Frame rate profiles may be created to ramp the frame rate up or down during a single capture.
- Exposures as fast as 285 nanoseconds with global electronic shutter, auto exposure capabilities, and secondary exposures termed Extreme Dynamic Range (EDR) to reduce over exposure of flash events.
- 32GB high-speed internal RAM with the potential to be segmented into 63 memory partitions. Captures non-recoverable after powering down.
- High-resolution timing resolution faster than 20 nanoseconds.
- Automated, hands-free black reference calibration. May be set to take a current session reference at the beginning of each image capture for optimal image quality.
- Triggering options include: software triggering at PC, hardware triggering (sensors, switches, etc.) image-based auto trigger, and adjustable trigger locations such as pre or post-event capture.

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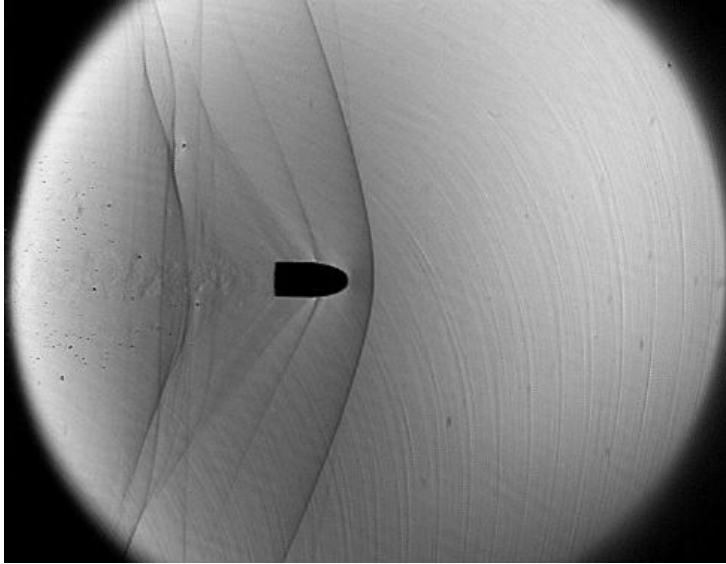
Phantom v611 File Formats:

Cine	PCX
Cine Compressed	TGA
Cine RAW	TIFF
AVI	LEAD
h.264 MP4	JPEG
Apple ProRes	JTIF
MOV Uncompressed	RAW
Multipage TIFF	DNG
MXF PAL & NTSC	DPX
BMP Win & OS/2	

Phantom v611 Features (Continued):

- Motion analysis capabilities include distance/displacement, angles, velocity, acceleration, and angular velocity through the PCC control software and CV viewing software.
- Camera synchronization possible with two or more cameras for 3D motion analysis (requires additional software for 3D motion analysis).
- Gb Ethernet connectivity
- Strobe Output (Customer must request appropriate cable be included.)
- Dual HD-SDI Outputs can provide 4:4:4 video (except at 60 fps) or two single 4:2:2 HD-SDI ports for playback and live.
- Analog Video-Out: NTSC or PAL (Customer must request appropriate cable be included.)
- 100-240VAC, 220W Power Supply
- Fill factor: 56%
- Dynamic Range of 57.7dB
- Weight: 11.75 lbs without lens
- Dimensions: 11.5 x 5.5 x 5.0 inches without lens or handle

VISION RESEARCH PHANTOM V611 HIGH-SPEED CAMERA



Aimed Research Capability Highlights:

Multi-Camera Synchronization

Multi-Camera Improved Frame Rate Setups

High-Speed Schlieren Imaging Of Invisible Gradients

Sensor Data Acquisition Correlated To Frame Exposures

Aimed Research Specific Features and Capabilities:

- Sound trigger available for ease of use in ballistic applications.
- VariMag system available for adapting to various microscopes.
- Multiple Phantom v611 cameras available for synchronization.
- Beamsplitter optical setup available with limited applications for 180° out-of-phase frame capture. This would allow the combined images to be reviewed or stacked into a new image sequence resulting in double the frame rate for a given resolution compared to a single camera.
- High-speed schlieren setups available with 6in, 8in, or 12in optics for viewing invisible phenomena like shock waves and other pressure, heat, or chemical gradients, and various turbulent flows. Aimed Research's setups may provide increased depth of field at $f/11$ to $f/16$ while operating at sub-microsecond exposures (as fast as 285 nanoseconds).
- USB-based data acquisition systems available for sensor data capture correlated with instant of frame exposure.

This data sheet is for reference only. For detail-critical applications, please request the camera serial number and discuss the specification details directly with the manufacturer, Vision Research.