

DATA SHEET

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Phantom® v2511

The world's fastest 1 Mpx ultra high-speed digital camera is also the most light sensitive.

Key Features:

- 1 Megapixel sensor (1280 x 800)
- 25Gpx/s throughput
- 1µs minimum exposure
- 500ns minimum exposure with FAST option*
* Export controlled feature
- ISO (ISO 12232 SAT method):
Mono: 100,000 T and 32,000 D
Color: 10,000 T and 6,400 D
- Up to 96GB memory
- Phantom CineMag® compatible
- Weight (without lens): 16 lbs, 14 oz. (7.7 Kg)

RESOLUTION - v2511*					
H	V	Max FPS	H	V	Max FPS
1280	800	25,600	512	512	75,400
1280	720	28,500	512	384	99,500
1024	800	30,500	384	256	170,600
1024	512	47,300	256	256	205,000
896	800	33,600	256	128	375,700
768	768	39,100	128	64	764,700
640	480	69,900	128	32	1,000,000
			128	16	1,000,000

*Assumes FAST option is installed
Maximum v2511 standard: 677,000 fps



Key Benefits:

The Phantom v2511 ultra high-speed digital camera offers ultra high throughputs with improved sensitivity plus a host of other benefits:

- Speed:** The Phantom line's new member, the Phantom v2511 achieves over 25 Gpx/s and more than **25,000 frames-per-second** (fps) at its full megapixel resolution of 1280 x 800. At lower resolutions, it reaches over 1,000,000 fps (with FAST option) and 677,000 fps standard.
- Sensitivity:** The Phantom v2511 has improved light sensitivity, providing better picture quality and more lighting flexibility. Using the ISO 12232 SAT method, the v2511 is measured at:

v2511 ISO	T (Tungsten)	D (Daylight)
Monochrome	100,000	32,000
Color	10,000	6,400
- Proven Platform:** The Phantom v2511 is built on the proven Phantom Ultra High-Speed camera platform, bringing with it the line's full array of unique features. It is compatible with all ultra high-speed accessories and software and has the same operation.
- Global Service & Support:** The Phantom v2511 is supported by Vision Research's Global Service and Support network offering AMECare Performance Services from multiple sites around the globe. These services help you maximize the value of your Phantom camera.

Sensor Characteristics:

The Phantom v2511 is based on a Vision Research designed **custom CMOS sensor**. The **28 micron pixel size means high light sensitivity** and Vision Research's innovative design increases the sensitivity even more. Each pixel has a **bit depth of 12 bits** yielding 4,096 gray levels with high dynamic range. Each camera comes in monochrome and color versions.

Sensor resolution is 1280 x 800 "widescreen" format. The physical size of the sensor is 35.8mm x 22.4mm. The v2511 has a **global electronic shutter** capable of exposures as fast as 1 µs on a standard camera, or, 500 ns with the export controlled FAST option, **to eliminate motion blur**.

Phantom v2511 - Back Panel



Image Storage:

The **v2511 can be equipped with 24GB, 48GB or 96GB** of high-speed memory. A camera with 96GB of memory, recording at 10,000 fps at 1280 x 800 can record a single high-speed shot for up to 6.2 seconds.

And, the **Phantom CineMag** feature is standard on all ultra high-speed models. With the ability to save 1GB/s of data to an attached CineMag, a 96GB shot can be saved in about 1.5 minutes. The resulting **cine is securely stored in non-volatile memory.**

Connectivity:

As with all Phantom Ultra High-Speed Cameras, the v2511 has a large array of easy-to-access connections. On the back panel of the v2511, you will find:

Connections on the v2511 back panel		
1 Trigger BNC	6 HD-SDI 1 BNC	11 Backup DC Power
2 F-SYNC BNC	7 HD-SDI 2 BNC	12 GPS
3 Timecode In BNC (IRIG, SMPTE)	8 10Gb Ethernet (RJ45 connector)	13 Range Data
4 Timecode Out BNC (IRIG, SMPTE)	9 1Gb Ethernet	13 Range Data
5 Power Switch	10 Primary DC Power (20 - 28VDC)	15 Capture Port

Command & Control:

You can set up and control your Phantom v2511 camera the same way all other Phantom Ultra High-Speed Cameras are controlled. The v2511 uses proven **Phantom Camera Control (PCC) Software**. You can also connect a video monitor and use the **on-camera controls**, or connect the **Phantom Remote Control Unit (RCU)** to the camera's Remote port.

Advanced Features:

The v2511 has all of the advanced features you have come to expect in the Phantom Ultra High-Speed Camera line:

v2511 Advanced Features	
Image-Based Auto-Trigger	PIV features (straddle time = 500 ns)
Internal Mechanical Shutter	Burst Mode
Multi-Cine	Quiet Fans
Continuous Recording	

AMETEK Vision Research's digital high-speed cameras are subject to the export licensing jurisdiction of the Export Administration Regulations. As a result, the export, transfer, or re-export of these cameras to a country embargoed by the United States is strictly prohibited. Likewise, it is prohibited under the Export Administration Regulations to export, transfer, or re-export AMETEK Vision Research's digital high-speed cameras to certain buyers and/or end users.

Customers are also advised that some models of AMETEK Vision Research's digital high-speed cameras may require a license from the U.S. Department of Commerce to be: (1) exported from the United States; (2) transferred to a foreign person in the United States; or (3) re-exported to a third country. Interested parties should contact the U.S. Department of Commerce to determine if an export or a re-export license is required for their specific transaction.

Environmental Specs:

- Operating Temperature: -10 to +50 C
- Storage temperature: -20 to + 70 C
- Humidity: 95% non-condensing
- Altitude:
 - Operational 0 to 10 k feet above sea level
 - Non-Operational -500 to 50 k feet above sea level
- Magnetic Field Immunity: 500 amp-meter
- Regulatory: EMI/RFI
 - Emissions EN 55022, FCC part 15
 - Conducted EN 55022
 - Immunity EN 55024
 - ESD IEC 61000-4-2
- Random Vibration:
 - Operational 0.25G, 5 –500 – 5Hz, 1.0 Octave/min 10 Sweeps (5 Cycles)
 - Non-Operational 1.2G, 5 – 500Hz, 1.0 Octave/min 10 Sweeps
- Shock:
 - Operational 5.5G, 11mSec half-sine with 10 shocks in all axis.
 - Non-Operational 33G, 11mSec half-sine with 10 shocks in all axis
- Natural Frequency: Operational 5-200 Hz
- Safety: IEC 60950



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