

DATA SHEET

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*Phantom v642 Broadcast
Shown with optional CineMag interface and On-Camera Controls*

v642 Broadcast

Ultra-slow motion for
live sports and events

Key Features:

Frame rates for up to 90X ultra-slow motion supporting 2k, 1080p and 720p resolutions.

Multi-matrix color correction for fast and accurate color matching to normal frame rate Live Sport cameras.

Breakthrough light sensitivity: ISO (ISO-12232 SAT method):
Mono: 16,000 T and 6400 D
Color: 1600 T and 1600 D

Versatile Dual HD-SDI, two HD-SDI ports for dual-link 4:4:4 or 2x 4:2:2 independent video outputs

Multi-cine recording capability.

Remote Replay Camera Control

EVS integration for camera control and playback

1 μ s minimum exposure times for sharp images of fast moving events

Internal mechanical shutter for hands-free / remote black referencing

8 GB, 16 GB or 32 GB built-in high-speed memory

12-bit pixel depth

Gb Ethernet for camera control

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Key Benefits:

WHEN IT'S TOO FAST TO SEE, AND TOO IMPORTANT NOT TO®

The Phantom v642 is the third generation broadcast camera. It retains the **unique ability to both record and playback ultra-slow motion footage simultaneously**, while adding the capability to **accurately color match regular speed broadcast cameras**. The internal high-speed dynamic RAM can be segmented into different partitions. You can record Ultra high-speed events recorded into one memory segment while simultaneously playback a previously recorded event directly from the camera. This feature gives the v642 flexibility to support environments with and without playback server support. The v642 can be connected to a controller in the studio or OB truck which can access the camera's memory for playback while the camera operator is framing and recording the live action.

The v642 is supported by a 4 megapixel 2K sensor that can record full-resolution frame rates of 1450 frames-per-second and be leveraged to support pan and zoom applications. Typical broadcast resolutions are supported, in addition to 1080p at 2560 frames-per-second.

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Phantom v642 Broadcast
Back View

Leading slow-motion Solution Providers around the world have chosen Phantom cameras as the core of their broadcast-ready solutions leveraging our “powered by Phantom” program.

Our Emmy® Award winning Ultra high-speed cameras have been leveraged by integration partners globally to support Soccer, Tennis, Football, NASCAR, Baseball & Formula 1 Grand-Prix. Some key events covered are **Football World Cup**, **ATP grand slams (Roland-Garros 2011)**, **2010 Olympics**, baseball’s **World Series**, and **2010 FIFA World Cup**.

What makes the v642 so unique and so perfect for ultra-slow motion replay?

Extremely high frame rates at HD resolutions enables playback speeds as much as 90X times slower than live action. (For example, at 720p, the maximum recording speed is 5850 fps. Play that back at 60 fps to achieve a slow-down of 97 times.) Catch what the eye cannot see in live action. Marvel at the amazing skills of an athlete, watch muscles ripple, eyes focus, intense concentration. Ultra-slow motion playback evokes a deep visceral, emotional reaction in viewers.

Excellent control of HD-SDI image quality. The Phantom v642 image lends itself perfectly to the high-standards of the Live Sports Broadcast industry. The v642 now supports **multi-matrix color correction allowing for accurate color matching to normal frame rate cameras** leveraging independent adjustments of saturation and hue of each of the 16 axes. Working with video matrix, hue, gamma and chroma adjustments enables the Phantom v642 to match broadcast cameras shooting an event at normal speeds.

An electronic global shutter capable of microsecond exposure times. It is highly unlikely you need such short exposures to freeze motion and prevent blur in sporting activities. But, the advantage of the v642 technology has coming from supporting scientific, academic and industrial applications, where short exposures are often required, benefit the Live Sports Broadcast with high quality imagery without bounds. We’ve brought industry leading performance required by those extreme applications to the v642.

High light sensitivity. Rated at 1600T ISO (color) using the ISO 12232 SAT method, the v642 has enough light-gathering capability to deal with high frame rates, short exposure times and unpredictable lighting conditions. Enabled by a custom-designed sensor with high quantum efficiency and a unique microlens technology, the v642 will produce well exposed images which lessens the need to introduce gain and possible noise.

Multi-cine support. In addition to segment the internal memory up to 63 segments, you can record into one segment while playing back a slow-motion clip from another. One segment is always continuously recording the live action. When an important event takes place, trigger that segment to save the recording. The live recording automatically moves to the next segment. During camera operation, recorded clips can be viewed, trimmed, and setup to playback the clips either from the camera or using integrated servers on-truck.

ISO SAT			
Mono		Color	
ISO SAT T	ISO SAT D	ISO SAT T	ISO SAT D
16,000	6400	1600	1600

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Versatile Dual HD-SDI. The multi-cine capability is supported with a dual independent video port architecture. The “live” image is always played through one of the two HD-SDI ports (and thru the viewfinder), while the second HD-SDI port can be used to simultaneously playback saved clips. Either or both of these outputs can be fed to an external recorder or clip server. The camera operator continues to frame the live action during remote playback.

EVS support via UltraMotion. EVS software supports the v642 natively, enabling all these features from an OB truck. An operator in the truck can segment memory, start recording live images, trigger the camera, view any saved clip, scrub through the clip, trim it and queue it for playback – all without the need to first download the clip.

Custom fit B4 adapter. While the v642 comes standard with a PL-mount allowing for full sensor coverage (2560 x 1600 pixels), customized B4 adapter options are available to support native 1080p in sports broadcast.

If you are looking for the ultimate in ultra-slow motion playback solutions for sports broadcast, consider the Phantom v642. Contact your local Vision Research representative today.



Phantom v642 Broadcast

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.

Focused

Since 1950, Vision Research has been shooting, designing, and manufacturing high-speed cameras. Our single focus is to invent, build, and support the most advanced cameras possible.



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