PRELIMINARY

Phantom®
Flex4K
Camera Preview

- 4K at up to 1000 fps
- Low-noise, excellent dynamic range
- Records ultra high-speed and sync-sound frame
- Supports both RAW and compressed recording formats

Images shown are of camera prototype

Key Benefits:

Introducing the Phantom Flex4K, the Industry's Most Versatile Digital Cinema Camera

The Phantom Flex4K is a full-featured digital cinema camera, capable of speeds from 23.98 to over 1000 frames-per-second (fps) at 4K and up-to 2000 fps at 2K pixel resolution. Building upon the award winning technology of Phantom digital cinema products, the Flex4K combines features found in the latest cinema cameras with those found only in specialty cameras.

With the option to record either uncompressed raw or with industry-standard compression, the workflow is now just as flexible as the camera's frame rate. The latest in non-volatile storage technology is implemented to move data quickly, while a complete on-camera control menu eliminates the need for a computer on set.

Key Features:

Full resolution: 4096 x 2304

4096 x 2160 @ 1000 fps

1920 x 1080 @ 2000 fps

New Phantom CineMag® IV hot-swappable recording media

Advanced on-camera control interface

Integrated battery back

Download & transcode support for both PC & Mac platforms now included

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Flex4K

Features (continued):

12-bit pixel depth

Ultra fast progressive scan shutter

Memory can be partitioned for multi-cine

Internal mechanical shutter for hands-free and remote black reference

Playback and save controls on both sides of the camera

Sync connector for simplified stereoscopic imaging

Genlock for synchronizing video playback

Phantom RCU compatible

PL Mount standard, interchangeable Canon EOS and Nikon F mount options

Cinematic Design, 35mm Depth of Field, Exceptional Image Quality

Designed with the cinematographer in mind, the form factor of the Phantom Flex4K adapts to a variety of shooting environments. From the studio to extreme conditions, the Flex4K is built to perform.

At 4K resolution the Flex4K offers super-35mm depth of field. The custom 10-megapixel sensor captures intricate detail with impressive dynamic range and low noise. This means excellent image quality and low-light performance. Intelligent temperature control and advanced mechanical design provides quick to shoot capability with an ultra stable image.

Convenient and Intuitive Camera Controls

Controlling the Phantom Flex4K is easier than ever with a full-featured on-camera control interface for both basic and advanced camera operation. Set up universal capture and recording parameters before the shoot, while retaining access to the more commonly adjusted parameters like frame rate and exposure time at the push of a button.

Capture, trigger, playback and save controls can be found on both sides of the camera in order to provide a seamless workflow for different shooting environments.

Remote control is also possible with a handheld Phantom RCU, which can be connected to the camera via a cable or built-in Bluetooth™ connection at a distance up to 100 meters.

Expanded Recording Options Cover All the Bases

The Phantom Flex4K is available with up to 64 Gigabytes of internal RAM. Select "Loop mode" for the fastest high-speed workflow. Loop mode records into the RAM buffer at the camera's top speeds, then once the camera is triggered the files can be quickly offloaded to an installed Phantom CineMag IV, available in sizes up to 2TB.

For longer record times use run/stop (R/S) mode in order to record directly to the CineMag IV at speeds over 100 4K frames-per-second and record for several minutes. This is an excellent option when ultra high-speed is not required. In fact, at 24 fps you can record more than an hour of raw 4K footage directly to a 1TB CineMag IV.

For the first time on a Phantom, the camera can be set to write either raw or compressed files directly to the CineMag. There are benefits to both options. Cine Raw files are uncompressed and maintain the most information for processing. They are compatible with several post processing and color grading systems, or they can be converted to a variety of formats using software provided with the camera.

Alternatively, choose to save industry-standard compressed files directly to the CineMag IV. While not as fast of an in-camera workflow as working with raw files, this increases record time and decreases file size, and simplifies the process straight out of the camera. This is a great option when raw files are not required.

A third workflow option is recording the HD-SDI video playback with a video-based field recorder. These devices are easy to find and easy to use, and take advantage of the camera's in-camera video scaling for high-quality 4:4:4 1080p or 4:2:2 4K video via the 2x 3G-SDI outputs.

Inputs/Outputs	
Power input	1x 3-pin 24V input (+14-28vdc)
Battery mount	Integrated standard battery back
12V Power aux outputs	1x 2-pin Lemo, 1x 4-pin Hirose for monitor
24V Power aux outputs	2x 3-pin Fischer w/ R/S
Ethernet	1x 8-pin Fischer for optional software operation & file download
Remote	1x 5-pin fischer for RS232 & +12VDC
Bluetooth	1x Bluetooth antenna for remote operation (up to 100m)
HD-SDI	2x 3G HD-SDI BNC (2x 4K 4:2:2 or 2K 4:4:4), 1 return, includes Genlock support
Sync	1 Fischer: F-sync, Time code in & out, trigger
Viewfinder	1 Viewfinder connector (TBD)

Resolution / Maximum Frame Rates	
Resolution	**Max fps Loop Mode**
4096 x 2304 (max res)	900 fps
4096 x 2160 (4K standard)	1000 fps
3840 x 2160 (16 x 9)	1000 fps
1920 x 1080 (16 x 9)	2000 fps
1280 x 720 (16 x 9)	3000 fps

Maximum Record Times	*recording times vary based on memory size, frame rate and resolution		
Resolution	**Frame Rate (fps)**	**64GB RAM**	**1TB CineMag IV R/S Mode**
4096 x 2304 (max res)	900 (max loop)	5 seconds	N/A
4096 x 2160 (4K std)	1000 (max loop)	5 seconds	N/A
4096 x 2160	125	45 seconds	13 minutes
4096 x 2160	24	3 minutes	62 minutes
1920 x 1080 (16 x 9)	2000 (max loop)	5 seconds	N/A
1920 x 1080	500	45 seconds	13 minutes
1920 x 1080	24	15 minutes	250 minutes

Phantom Flex4K Camera Preview

Available Late 2013

Additional Features & Video Output

Camera synchronization and 3D recording is made easier with a single cable connection between cameras.

Advanced video monitoring includes 2x 3G HD-SDI outputs, and 1x return, customizable for monitoring with adjustable frame guides, and/or a clean output for use with HD-SDI field recorders. Both HD-SDI outputs support video scaling for a sharp 1080p output of the camera's full sensor. The 2x 3G-SDI outputs can also be combined to monitor the full resolution on 4K production monitors. Zoom, focus and exposure assist functions are all included.

Imaging Specifications:

Pixel Size: 6.75 micron

Sensor size: 27.7 x 15.5mm

Sensor @ 1080p: 13 x 7.3mm

Lens mount: PL (standard), Canon EOS, Nikon F/G

Additional Features:

Up to 64GB internal RAM

Recording Media: Phantom CineMag IV

Size: 11.5 x 5.5 x 5.0 in (LxWxH); 29.2 x 14 x 12.7 cm

Weight 13 lbs (5.33 kg)

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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