

Phantom Flex 4K in a nutshell

General

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. Made with a super 35 format sensor 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.

Resolution / Max Frame Rate

4096 x 2304 (max res) - 939 fps

4096 x 2160 (4K standard) - 1000 fps

2048 x 1080 - 1977 fps

1280 x 720 - 2932 fps

Low-noise, excellent dynamic range

Records ultra high-speed and standard frame rates

Support both RAW and compressed recording formats (feature to be more optional in the future)

A new RAM upgrade doubles the internal RAM to 128GB. This RAM allows the camera to record for a set time depending on the frame rate and resolution.

The increased internal RAM of 128GB allows the Flex4K to record for twice as long at all resolutions and frame rates. See the recording time table below:

Format	Resolution	Size (mm)	Image Circle
Full Sensor	4096x2304	27.7x15.5	31.7mm
Dci 4K (1.89)	4096x2160	27.7x14.6	31.3mm
Quad HD	3840x2160	25.9x14.6	29.7mm
2:1 Anamorphic	2752x2160	18.7x15.5	24.3mm
HD	1920x1080	13x7.3	4.9mm

Maximum Record Times *recording times vary based on memory size, frame rate and resolution

Resolution	Frame Rate (fps)	64GB RAM	128GB RAM	2TB CineMag IV_{R/S} Mode*
4096 x 2304 (max res)	938 (max loop)	5 seconds	10 seconds	N/A
4096 x 2160 (4K std)	1000 (max loop)	4.9 seconds	4.9 seconds	N/A
4096 x 2160	125	38 seconds	38 seconds	20 minutes
4096 x 2160	24	3 minutes	3 minutes	100 minutes
1920 x 1080 (16 x 9)	1977 (max loop)	10.1 seconds	20.2 seconds	N/A
1920 x 1080	250	78 seconds	78 seconds	40 minutes
1920 x 1080	24	13 minutes	13 minutes	200 minutes

The camera can record directly to the CineMag when the internal memory of the camera does not allow for a long enough duration for real time. The max speed for “direct to mag” recording is 130fps. If that is not sufficient, you might want to consider the original Flex, that as for now we still have, where you can get 400fps direct to mag.

Lighting

With the high sensitivity of the camera, lights is much less of an issue but flickers are. Many lighting sources that works perfectly for low-frame rate will cause flickers. Any lighting that flickers at the line frequency will generally be acceptable for use when filmed at double the line frequency (120 fps in North America and 100 fps in EU). Above these speeds special care need to avoid flickers. Due to their larger filaments, tungsten lamps of 2K watts or higher generally acceptable in 60Hz region and 5k watts or higher in the 50Hz world. 5K and 10K range are the safest.

It is said, though we are proving it wrong, that lights with multiple smaller lamps such as nine-lights will generally flicker as what matters is the size of the individual lamps.

Optics

The standard PL mount lenses can be used for full frame at full resolution (2560x1600) or an extraction can be taken out of the full frame.

When used at full resolution the automatic scaling function will output 1920x1080P. Any resolution below 2560x1600 can be extracted including standard 1920x1080 or 1280x720.

When a 1080P extraction is used, the equivalent focal length of the lens will be slightly "longer" by X1.3.

The mount can accommodate Super 16 PL mount lenses which will extract 1280x720 at a 12.8x7.2mm sensor size (14.7mm diagonal).

File Formats

The camera records RAW files and output in two ways, HD or native RAW.

HD Video at single link (4:2:2) or dual link (4:4:4) HD-SDI.

The file format calls Cine file is the intellectual property of Vision Research but "is open" and can be converted to industry standards as DPX, TIFF, JPEG, DNG or Cinema DNG.