

Panavision in close-up

A more *flexible*
approach to
high speed shooting.



The new Phantom Flex has arrived and is the next generation High speed, full 1920x 1080 HD camera, capturing images that the eye cannot normally see.

The Phantom Flex was released by Vision Research in the last quarter of 2010 and the first one in the region was delivered to Panavision early this year. It was immediately snapped up by DP Aaron Morton for use on the second series of Spartacus, which has just begun shooting in New Zealand. Aaron had been using the Phantom Gold on the previous series, but amongst



the many improvements the Flex offers, he was particularly impressed by the increased ASA rating. "The sensitivity of the Flex is nearly three times greater than the Gold which not only gives me more flexibility, but also saves time as in some situations we can get the shot with less lighting."

See the **Key Differences Chart** between the Flex and the Gold on the next page.

Conclusions

Main advantages of Flex over Gold,

1. Flex will record 2.6 times faster at 1080P over the Gold. (Or 3.8 times faster in 720P)
2. 2.5 stops faster than the Gold.
3. Flex has Auto Black Balance with improved stabilized imaging where Gold only has Manual Black Balance (CRS).
4. Flex has new electronic capping shutter for Auto Black Balance.
5. No Vertical Ghosting at slow frame rates with the Flex.
6. Flex is also designed to work as 3D with Genlock and camera Sync for playback.
7. The Flex is easier and quicker to operate.
8. Flex can be used remotely with hot swap batteries.
9. Dual accessory power outlet.

KEY DIFFERENCES BETWEEN FLEX AND GOLD

Feature	Flex Camera	HD Gold Camera
Sensitivity	HQ mode = 1,000ASA SQ mode = 1,200ASA	320ASA
Speed	HQ mode = 10fps to 1277fps SQ mode = 10fps to 2577fps @ 1920 x 1080 or HQ mode = 10fps to 2700fps SQ mode = 10fps to 5377fps @ 1920 x 720P	1fps to 1057fps @ 1920 x 1080P 1fps to 1533fps @ 1920 x 720P
Sensor Size	35mm CMOS 16 x 9, type, 2560 x 1600 down to 640 x 480	35mm CMOS Square type, 2048 x 2048 down to 2048 x 480
Camera Bite Depth	12-Bit pixel	14-Bit pixel
Noise floor	SQ mode displays approx 6dB to 9dB more noise in each RGB channels over the gold. HQ mode displays approx 3dB To 6dB more noise over Gold.	Display less noise than the Flex
Keying in green screen	HQ and SQ mode will key to the same level as Gold using Iridas, frame cycle.	Keys using Iridas, frame cycler.
Black Crushing	HQ mode applies some crushing to hide the noise over SQ mode.	No crushing
Vertical Ghosting	No Vertical Ghosting.	From 1 to 250 fps, the camera displays vertical ghosting with fast motions.
Black Balance, (CRS= Current Reference Session) (Temperature Stability)	In HQ mode, it performs its own CRS. (Auto Black Balance) In SQ mode, within the camera menus, you can switch on the CRS. Before the D-Ram starts to Record every time, it performs a CRS. Has a new capping shutter and takes approx 5 seconds to perform a CRS.	No capping shutter and black noise has to be constantly checked. The CRS has to be done manually and therefore takes longer to have camera ready before shot.
Highlight handling	SQ mode, no issues. In HQ mode, with over saturated imaging, blooming occurs with a colour shift.	No issue
Visual Dynamic range	The visual range using HQ and SQ mode is approximately 8 stops. (Camera Default=800ASA).	The visual range is approximately 6 stops. (Camera Default=320ASA).
Power input	Dual power input for hot swap batteries. 20V – 36VDC, 6.2A MAX, 5A Typical.	Single power input only. 20V – 36VDC, 7.2A MAX, 6A Typical.
Monitoring output	2 x 4:2:2 HD-SDI video ports and can be configured as dual-link 4:4:4 video. Also each HD-SDI 4:2:2 BNC outputs can be configured differently with one BNC displaying menu plus image and the other BNC, displaying image only.	1 x 4:2:2 HD-SDI video only.
Genlock	Synchronizing two cameras video – essential for 3D video or O/B camera workflows.	Only locked by computer as master and slave.
Sync Timecode	Software or BNC, SDI frame synchronization to external signal, allows multiple cameras to be synchronized for playback.	Only via computer clock.
Auxiliary power outlet	2 x 12VDC auxiliary power outputs for powering external devices.	1 x 12VDC auxiliary power outputs for powering external devices.
Camera Menus	Easier control selection for mode settings, playbacks, edit and saving	Slower to select functions within the menus.
Remote trigger	Now driven by a simple BNC remote trigger and can be interfaced with any accessory	Only via aux power connector.