



PHANTOM TMX 7510 TMX 6410

HIGH-SPEED CAMERAS

Up to 76,000 fps at 1280 x 800 (7510), over
300,000 fps at 1280 x 192 and 640 x 384
Very high sensitivity

FEATURES & BENEFITS

DESIGNED FOR TRUE HIGH-SPEED APPLICATIONS

- 2 performance models offer extreme high frame rates at larger resolutions, up to 1.75 Million fps* at 1280 x 32 and 640 x 64 (TMX7510). 1 μ s minimum exposure standard, 95ns with FAST option.
- Real data, for real results: Frame rates are actual, with no interpolation. 2 x 2 Binning Mode provides double the vertical resolution at high frame rates for added flexibility.
- Very high native light sensitivity, made possible by the industry's first back side illuminated (BSI) sensor.

FOCUS ON DATA MANAGEMENT

- Record multiple experiments with up to 512GB of memory that can be partitioned up to 511 times.
- 10Gb Ethernet is standard for the fastest data download directly from the camera's RAM buffer.
- Use the Phantom CineMag V, for up to 8TB of non-volatile memory and fast image transfer.

**with export controlled FAST option*

FRAME RATES & EXPOSURE		
Top FPS at Max Resolution	7510: 76,000	6410: 65,940
Maximum FPS	7510: 772,050 1,750,000 with FAST option*	6410: 758,330 1,516,660 with FAST option*
Minimum FPS	100	
CAR Increments	Standard: 256 x 32, Binned: 128 x 64	
Minimum Exposure	1 µs standard, 95ns with FAST option*	
Electronic Shutter	Global Shutter	
PIV Features	Shutter-off mode with a straddle time of 229ns Supports Burst Mode	
Exposure Features	Extreme Dynamic Range (EDR), Auto Exposure	

IMAGING		
Sensor Type	CMOS, Back Side Illuminated (BSI)	
Maximum Resolution	1280 x 800	
Bit Depth	12-bit	
Pixel Size	18.5 µm	Binned: 37 µm
Sensor Size	23.7 x 14.8 mm; 27.94 mm diagonal	
ISO Daylight (12232 STD)	Mono 40,000; Color 12,500	Binned: Mono 50,000; Color 12,500
ISO Tungsten (12232 STD)	Mono 125,000; Color 16,000	Binned: Mono 160,000; Color 12,500
Exposure Index	40,000 - 200,000 Mono; 12,500 - 62,500 Color (Standard and Binned)	

FRAME RATE CHART

Table provides examples of common resolutions and frame rates. The record times shown are for 256GB RAM at the frame rate shown. Duration will be 1/2 for 128GB and double for 512GB.

Maximum Frame Rate - FPS; (256GB Record time - Sec)				
Resolution (H x V)	TMX-7510		TMX-6410	
	Standard	Binned	Standard	Binned
1280 x 800	76,000 (2.2)		65,940 (2.5)	
1280 x 640	94,590 (2.2)		81,980 (2.5)	
1280 x 480	126,500 (2.2)		109,630 (2.5)	
1280 x 448	134,610 (2.2)		116,660 (2.5)	
1280 x 384	156,710 (2.2)		135,820 (2.5)	
1280 x 320	187,500 (2.2)		162,500 (2.5)	
1280 x 256	233,330 (2.2)		202,220 (2.5)	
1280 x 192	308,820 (2.2)		267,640 (2.5)	
640 x 384		308,820 (2.2)		267,640 (2.5)
1280 x 160	375,000 (2.2)		325,000 (2.5)	
640 x 320		375,000 (2.2)		325,000 (2.5)
1280 x 128	456,520 (2.2)		395,650 (2.6)	
640 x 256		456,520 (2.2)		395,650 (2.6)
1280 x 96	617,640 (2.2)		535,290 (2.6)	
640 x 192		617,640 (2.2)		535,290 (2.6)
1280 x 64	772,050 (2.2)		758,330 (2.7)	
640 x 128		772,050 (2.2)		758,330 (2.7)
FAST OPTION				
1280 x 64	875,000 (2.3)		758,330 (2.7)	
640 x 128		875,000 (2.3)		758,330 (2.7)
1280 x 32	1,750,000 (2.3)		1,516,660 (2.7)	
640 x 64		1,750,000 (2.3)		1,516,660 (2.7)

*Certain Phantom cameras are held to export licensing standards.
Details available at: www.phantomhighspeed.com/export

