



PHANTOM S710

Extreme High Speed
Machine Vision



Phantom S710
Front View



Phantom S710
Side View

7 Gpx/sec (60 Gbps) throughput
7,275 fps at 1280 x 800 resolution
CXP6 Protocol, GenICam compliant

FEATURES & BENEFITS

EXTREME HIGH FRAME RATES FOR MACHINE VISION APPLICATIONS

- The Phantom S710 offers renowned Phantom image quality and extreme high frame rates with a flexible and scalable machine vision work flow.
- At 7 Gpx/sec (60 Gbps), the Phantom S710 achieves over 7,000 fps at 1 Mpx resolution and up to over 700,000 fps at reduced resolutions.
- Very large 20-micron pixel, translating to higher lighter sensitivity, critical in extreme high-speed applications.
- Metadata ready and available in each frame's header for precision analysis.

MADE FOR MACHINE VISION

- CXP 6 and GenICam compliant, with standard protocols.
- Scalable, use just 1 bank of 4 CXP ports, 2 banks for 1/2 capacity, or 4 banks for full throughput.
- Flexible, with 8-bit or 12-bit output and multiple resolutions to reduce and manage data flow.

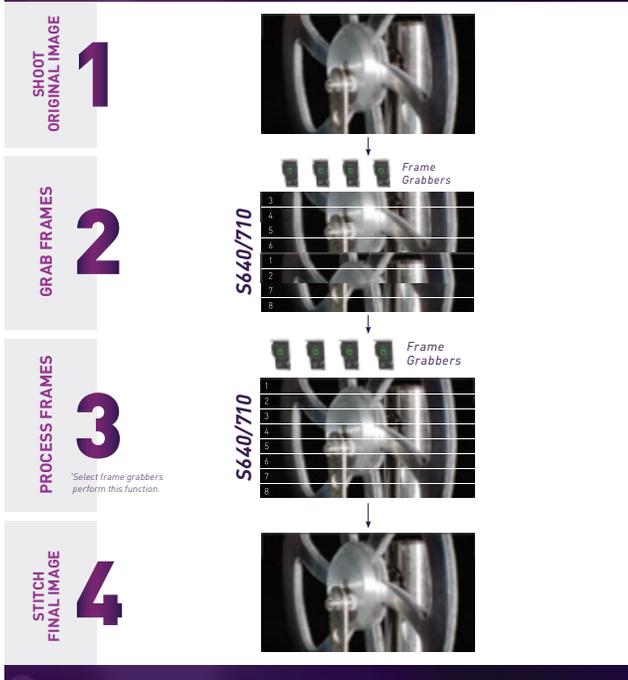
FRAME RATES & EXPOSURE

	12-bit	8-bit
Top FPS at Max Resolution	5,740	7,275
Maximum FPS	701,030	701,030
Minimum FPS	100	
CAR Increments	128 x 8	
Minimum Exposure	1 μ s 300 ns with FAST option	
Electronic Shutter	Global Shutter	

IMAGING

Sensor Type	CMOS
Maximum Resolution	1280 x 800
Bit Depth	12-bit, output in either 12-bit or 8-bit
Pixel Size	20 μ m
Sensor Size	25.6 x 16.0 mm; 30.18 mm diagonal
ISO Daylight (12232 STD)	Mono 6,000; Color 2,000
ISO Tungsten (12232 STD)	Mono 16,000; Color 2,000
Dynamic Range	59.6 dB
Readout Noise	29.0 e-

Resolution			FPS		
H	V	Bit Depth	4 Banks 8 Gpx/sec	2 Banks 4Gpx/sec	1 Bank 2 Gpx/sec
1280	800	8-bit	7,275	4,290	2,145
		12-bit	5,740	2,885	1,445
1024	768	8-bit	9,255	5,640	2,825
		12-bit	7,570	3,795	1,890
768	640	8-bit	13,980	8,940	4,505
		12-bit	11,975	6,045	3,015
512	512	8-bit	23,480	16,390	8,385
		12-bit	21,855	11,340	5,630
256	320	8-bit	57,430	49,850	27,375
		12-bit	55,600	36,090	18,255
128	32	8-bit	314,810	217,945	414,630
		12-bit	242,855	500,000	298,245
128	8	8-bit	N/A - Min res	N/A - Min res	701,030
		12-bit	128 x 32	128 x 32	701,030

IMAGE STITCHING PROCESS




CONNECTIVITY & SIGNALS

CXP6 Ports	4 banks of 4 CXP6 ports each. Bank A: May be used alone for up to 25 Gbps throughput Bank B: May be used with Bank A for up to 50 Gbps total throughput Bank C and D: May be used with Banks A and B for up to 60 Gbps total throughput.	
Timecode	IRIG-B Modulated and Un-modulated	
Port Descriptions	GPIO port	12 pin Hirose
	Power	Mini XLR
I/O Signals - available on GPIO	Input	Output
GPIO 0-3 - Bi-directional	Trigger In	Trigger Out
	Event In	SW Trigger Out
	Memgate	Strobe Ready
		Time Code Out
GPIO 4 - Isolated Input	Event In	
	Memgate	
GPIO 5 - Isolated Input		SW Trigger Out
		Strobe Ready
		Time Code Out



Phantom S710 Connector Panel

CONTROL

Exposure Start	Programmed in GenICam and operates as FSYNC
Exposure Active	Frame state and exposure duration are controlled by an input signal, for synchronizing with systematic processes
Metadata Available	Frame timestamp, event flag, lock to timecode flag, frame count, and core ID are output as an additional line at Row 0
Operational Protocols	CoaXpress (CXP) 6

MECHANICAL	
Size	5.75 x 5.75 x 3.5" (146 x 146 x 89 mm)
Weight	3.6 lbs (1.62 kg)
Lens Mounts	F Mount standard, EOS, C, M42 Mounts optional
Mounting Points	6 x 1/4-20, 16 x M5-0.8 mounting points
Internal Shutter	Standard, for remote black references
Cooling	Active cooling. Fans can be disabled via Quiet mode

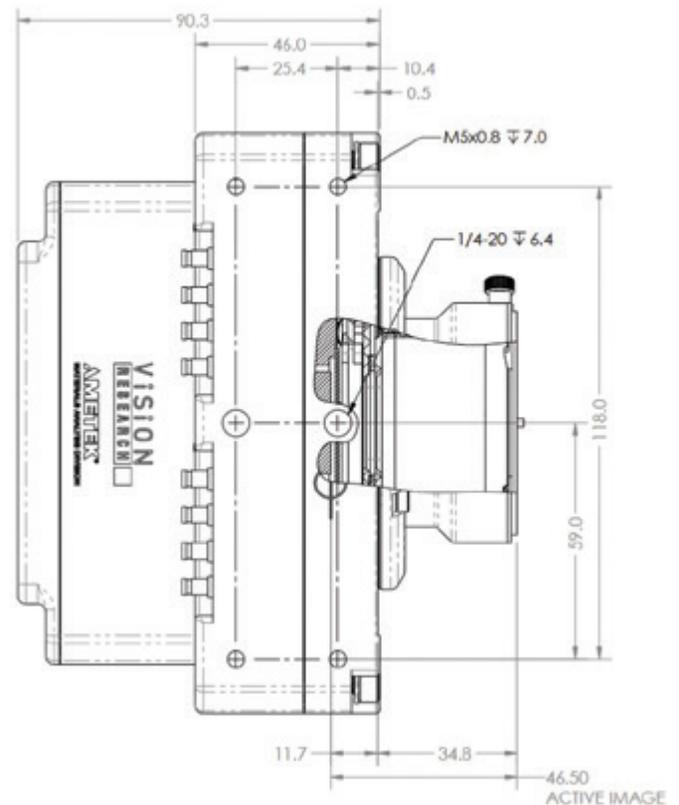
POWER	
AC Power	80W power supply included
Voltage Range	16-32 VDC

ENVIRONMENTAL	
Operating Temperature	-10 to +50°C
Storage Temperature	-20 to +70°C
Regulatory	Made in the USA CE Emissions – CE Compliant EN 61326-1 CE Immunity – CE Compliant EN 61326-1 FCC – CFR 47, Part 15, Subpart B & ICES-0003, Class A Safety - IEC 60950-1

GLOBAL SUPPORT NETWORK

The Phantom High-speed Machine Vision Cameras are supported by Vision Research's Global Service and Support network, offering Phantom Care Performance Services from multiple sites around the globe. Maximize the value of your Phantom camera with a selection of professional services from which to choose.

Learn more about our service offering at www.phantomhighspeed.com/Service-Support



ABOUT VISION RESEARCH

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

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