PHANTOM
S710

Machine Vision

Extreme High Speed
Machine Vision

*Phantom S710
Side View*

*Phantom S710
Front 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 600,000 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.
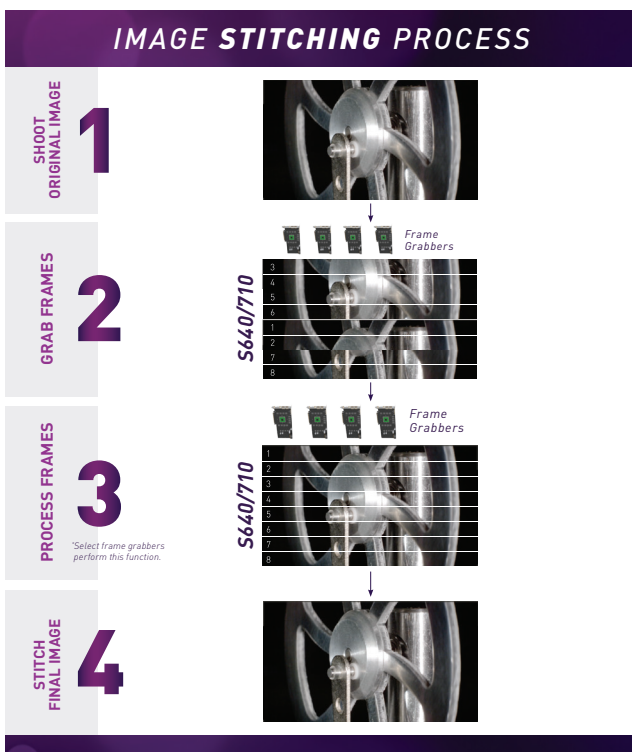
MADE FOR MACHINE VISION

- 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	641,000	510,000
Minimum FPS	100	
CAR Increments	128 x 8	
Minimum Exposure	1 µs 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 µm
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	Banks ABCD	Banks AB	Bank A
1280	800	8-bit	7,270	4,290	2,145
		12-bit	5,740	2,880	1,800
1024	768	8-bit	9,250	5,640	2,820
		12-bit	7,500	3,790	1,890
768	640	8-bit	13,980	8,940	4,500
		12-bit	11,800	6,040	3,010
512	512	8-bit	23,480	16,390	8,380
		12-bit	21,700	11,200	5,630
256	320	8-bit	57,430	49,000	25,000
		12-bit	55,600	34,000	17,500
128	32	8-bit	310,800	217,940	240,000
		12-bit	242,850	430,630	250,000
128	16	8-bit	N/A	244,600	510,000
		12-bit	N/A	641,480	386,350

Common resolutions and frame rates. Other resolutions, frame rates, and bank configurations need to be confirmed in the user application.

IMAGE *STITCHING* PROCESS

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

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
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

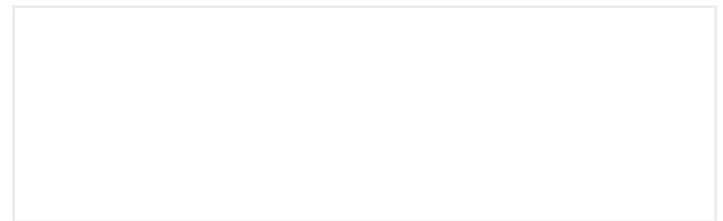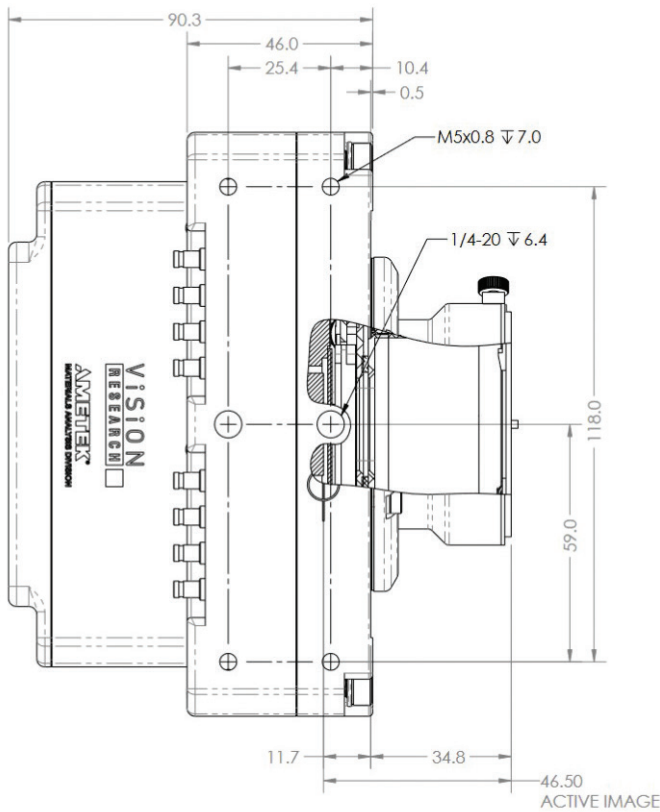|	
Size	5.75 x 5.75 x 3.5" (146 x 146 x 89 mm)
Weight	3.6 lbs (1.62 kg)
Lens Mounts	F Mount standard, EOS, C, M42 Mounts optional
Mounting Points	6 x 1/4-20, 16 x M5-0.8 mounting points
Internal Shutter	Standard, for remote black references
Cooling	Active cooling. Fans can be disabled via Quiet mode

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

Phantom cameras are supported by Vision Research's Global Service and Support network, providing PhantomCare services from multiple sites around the globe.

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.

VISION
RESEARCH
AMETEK®

100 Dey Road
Wayne, NJ 07470 USA
+1.973.696.4500