



Phantom S711  
Front View



Phantom S711  
Back View

# PHANTOM S711

1MPX HIGH-SPEED  
MACHINE VISION CAMERA

7,360 fps at 1280 x 800 resolution  
CXP-over-Fiber for extreme high-speeds  
High image quality, with low noise

## FEATURES & BENEFITS

### UNIQUE EXTREME HIGH-SPEED MACHINE VISION

- Very high frame rates: The Phantom S711 offers very high frame rates at large resolutions, packed in a streaming machine vision solution. It achieves almost 250,000 fps at reduced resolutions, supporting a wide range of applications.
- Ease-of-use: The S711 employs CoaXPress-over-Fiber (CXPoF) with CXP-12, the latest in high-speed machine vision technology, delivering high throughput in an uncomplicated format. Two simple cables reliably transfer data, with very low latency.

### ADD EFFICIENCY AND FLEXIBILITY WITH MULTIPLE ROI'S

- Up to 2 flexibly located Regions-of-Interest (ROI) focus on only the most critical parts of the event, reducing the amount of data transferred and allowing higher frame rates.
- Add flexibility to application setups: ROI's are flexibly placed in either the top half or bottom half of the image,
- Increase camera utilization: Each ROI feeds directly to its own frame grabber, allowing the camera to capture 2 events at once.

*\*with export controlled FAST options*

## IMAGE & SENSITIVITY

Sensor Type	CMOS, with Global Shutter
Maximum Resolution	1280 x 800
CAR Increments	128 x 16 (Bank A); 128 x 32 (Banks A & B)
Pixel Size	20 $\mu$ m
Sensor Size	25.6 x 16 mm: 30.18 mm diagonal
Bit Depth	12 bit, output in either 12-bit or 8 bit
<b>EMVA 1288 Measurements (at 532 nm) Standard Mode</b>	
Quantum Efficiency %	33.7% mono 29.1% color
Max. SNR (dB)	44.4
Absolute Sensitivity Threshold (p)	99.0 mono 113.4 color
Saturation Capacity (e <sup>-</sup> )	27417 mono 26842 color
Temporal Dark Noise (e <sup>-</sup> )	32.79
Dynamic Range (dB)	58.3

- Reported measurements were taken at 532 nm with both monochrome and color cameras, using the EMVA 1288 3.1 standard

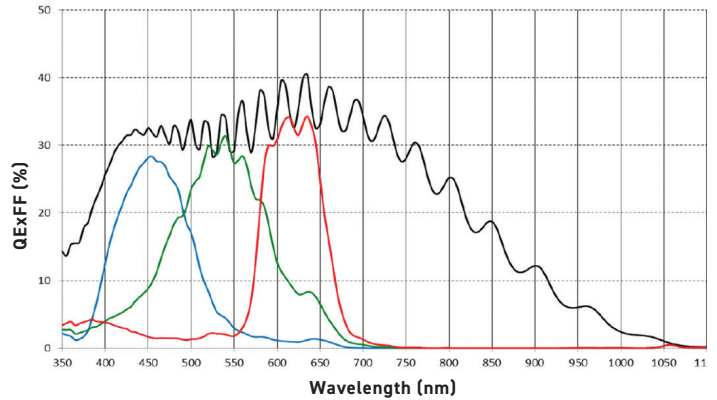
- Visit: [www.phantomhighspeed.com/emva](http://www.phantomhighspeed.com/emva) for more information on EMVA 1288



Phantom S711 Connectors

## SPECTRAL RESPONSE

### Quantum Efficiency Monochrome and Color



## CONNECTIVITY & SIGNALS

QSFP+ Ports	Bank A Bank B	
Timecode	IRIG-B Modulated and Un-modulated	
Port Descriptions	Timecode-in	Dedicated BNC
	I/O BNCs	3 Ports
	Power	6-pin Fischer
	Ethernet (for programming only)	RJ45
I/O Signals - available on GPIO 0, 1, 2	Signal	I/O
	Trigger In	Input
	Trigger Out	Output
	Software Trigger Out	Output
	Strobe	Output
	Event	Input
	Ready	Output
	Memgate	Input
	Timecode In	Input
	Timecode out	Output
	User out	Output
	User in	Input



RESOLUTION		FPS		
H	V	Bit Depth	2 Fiber Banks	1 Fiber Bank
1280	800	8-bit	7,360	4,320
		12-bit	5,670	2,870
1024	720	8-bit	9,850	5,960
		12-bit	7,760	3,960
1024	768	8-bit	9,260	5,600
		12-bit	7,290	3,720
768	640	8-bit	13,940	8,850
		12-bit	11,350	5,860
512	512	8-bit	23,240	16,170
		12-bit	20,010	10,720
256	320	8-bit	53,240	46,030
		12-bit	47,550	29,950
256	256	8-bit	63,610	55,230
		12-bit	55,640	35,900
128	128	8-bit	129,520	129,520
		12-bit	100,290	87,850
128	32	8-bit	220,060	220,060
		12-bit	147,180	139,910
128	16	8-bit	NA	249,080
		12-bit	NA	155,250

FRAME RATES & EXPOSURE		
	12-bit	8-bit
Top FPS at Max Resolution	5,670	7,360
Maximum FPS	155,250	249,080
Minimum FPS	24	
Minimum Exposure	1 μs, 300 ns with FAST option	
Exposure Features	Extreme Dynamic Range (EDR), Auto Exposure	



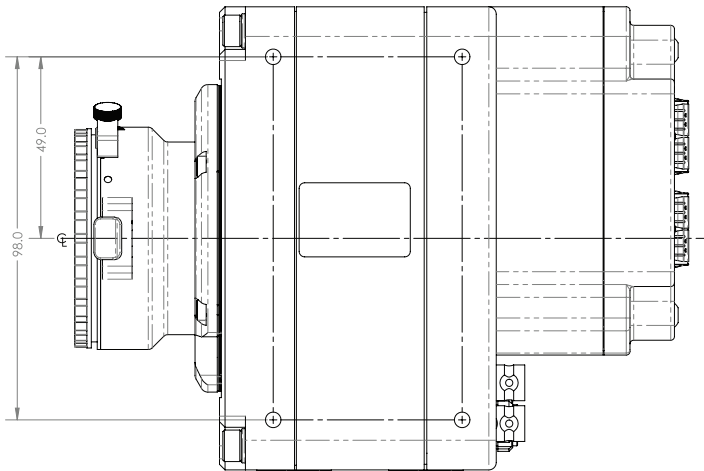
Phantom S711 with cables

## CONTROL

Operational Protocols	CXP-12, CoaXPress-over-Fiber (CXPoF), CXP 2.0 protocol compliant
Exposure Start	Programmed in GenICam and operates as FSYNC
Metadata Available	Meta data including Event ID, Event timestamp, Event payload can be streamed

## MECHANICAL

Size	5 x 5 x 6.3" (125 x 125 x 159.7 mm)
Weight	5.4 lbs (2.4 kg)
Lens Mounts	F Mount standard, EOS, C, M42 and PL 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

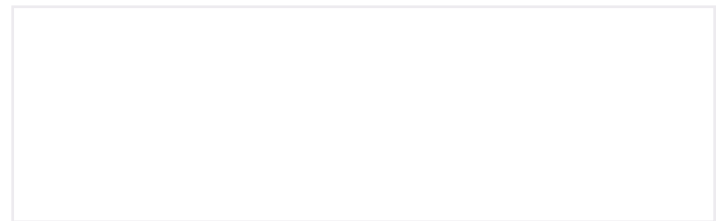
AC Power	80W 24V power supply included
Voltage Range	16-32 VDC

## ENVIRONMENTAL

Operating Temperature	0 to +50°C
Storage Temperature	-20 to +70°C
Operational Shock	30G, sawtooth wave, 11 ms, +/- 10 pulses all axes
Operational Vibration	MIL-STD-202H Method 214-I; Test Condition B 7.5 Grms, 15 min/axis
Regulatory	Made in the USA <b>Emissions</b> – CE & UKCA Compliant EN 61326-1 <b>Immunity</b> – CE & UKCA Compliant EN 61326-1 <b>FCC</b> – CFR 47, Part 15, Subpart B & ICES-0003, Class A <b>Safety</b> – 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.



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