

# PHARSIGHTED E9•100S

THE FIRST BACKSIDE-ILLUMINATED FULL-FRAME HIGH-SPEED CAMERA

## TECHIMAGING



### KEY CAMERA FEATURES

**Backside-Illuminated CMOS Image Sensor:**

640 x 480 pixels at 326,000fps

**Maximum Frame Rate:**

640 x 32 pixels at 2,720,000fps

**Class Leading Light Sensitivity:**

ISO 12232 daylight

ISO 200,000 monochrome

ISO 80,000 color

**Global Electronic Shutter:**

59ns minimum exposure time

343ns straddle time

**Camera Size:**

240mm (H) x 212mm (W) x 175mm (D)

9.45" (H) x 8.35" (W) x 6.89" (D)

Weight: 10kg (22.04 lbs.)

**Fast, In-Camera Storage:**

Removable U.2 NVMe SSD

**Internal Recording Memory:**

108GB, 216GB, or 432GB

**Fast 10-Gigabit Ethernet Interface:** Provides

camera control and high-speed image download to standard PC or MAC and Linux systems.

### FRAME RATE CHART

Resolution
Width x Height
640 X 480
640 X 448
640 X 416
640 X 384
640 X 352
640 X 320
640 X 288
640 X 256
640 X 240
640 X 224
640 X 192
640 X 160
640 X 128
640 X 96
640 X 64
640 X 48
640 X 32
640 X 16

E9•100S						
Max Frame Rate	108GB		216GB		432GB	
	Time (sec)	Frames	Time (sec)	Frames	Time (sec)	Frames
326,000	1.15	376,500	2.31	753,000	4.61	1,507,000
349,000	1.15	403,500	2.31	807,000	4.62	1,615,000
375,000	1.15	433,500	2.31	867,000	4.63	1,736,000
404,000	1.16	470,000	2.32	940,000	4.65	1,882,000
439,000	1.17	513,500	2.34	1,027,000	4.67	2,055,000
481,000	1.17	563,000	2.34	1,126,000	4.68	2,254,000
531,000	1.18	626,000	2.36	1,252,000	4.72	2,507,000
593,000	1.19	705,000	2.38	1,410,000	4.78	2,832,000
629,000	1.19	753,000	2.39	1,506,000	4.79	3,014,000
671,000	1.21	807,000	2.41	1,614,000	4.81	3,231,000
772,000*	1.22	937,000	2.43	1,874,000	4.85	3,751,000
910,000*	1.23	1,126,500	2.47	2,253,000	4.95	4,508,000
1,108,000*	1.27	1,410,500	2.54	2,821,000	5.09	5,647,000
1,416,000*	1.32	1,861,500	2.63	3,723,000	5.26	7,451,000
1,961,000*	1.42	2,774,000	2.83	5,548,000	5.7	11,177,000
2,428,000*	1.54	3,723,000	3.07	7,446,000	6.14	14,902,000
2,720,000*	2.06	5,584,500	4.11	11,169,000	8.22	22,354,000
2,720,000*	4.11	11,169,500	8.21	22,339,000	16.44	44,708,000

\*EXPORT RESTRICTED

## Camera Performance Specifications

Model	E9-100S
Full Frame Performance	640 x 480 pixels at 326,000fps
Example Frame Rates	640 x 384 pixels at 404,000fps 640 x 256 pixels at 593,000fps 640 x 128 pixels at 1,108,000fps
Minimum Exposure Time	Global electronic shutter to 59ns selectable independent of frame rate
Dynamic Range (ADC)	9-bit
Memory Capacity	108GB , 216GB, or 432GB
Memory Partitions	Up to 1024 memory segments
Sensor Size / Pixel Size	33.28 x 24.96mm / 52µm
Camera Control Interface	1 / 2.5 / 5 / 10G Ethernet
Video Output	HD-SDI signal
Video Conversion	Conversion of .SLOW to common video and image formats such as .AVI & .TIFF
Operating System Compatibility	Windows, MAC OS, and Linux

## Mechanical and Environmental Specifications

Mechanical	
Lens Mount	Nikon F / G type compatible, Canon EF, 1" C mount
Internal Filter	58mm threaded
Minimual Flange Distance	8.0mm
Mechanical Shutter	Internal, rugged
Camera Body (excluding protrusions)	240mm (H) x 212mm (W) x 175mm (D) 9.45" (H) x 8.35" (W) x 6.89" (D)
Camera Body	10kg (22.04lbs)
Mounting	3/8-16, top, bottom, left side
Power	Primary and backup 24-28VDC 200W, SSD up to +30W Input: 100-240VAC, 50/60Hz Output: 24VDC, 280W
Environmental	
Operating Temperature	0 to 40C, 32° to 104°F

### FLEXIBLE I/O

- Six 5V TTL, I/O BNCs, each settable as a Output, Input, or Open Drain Bi-Directional.
- Signal polarity, pulse delay, & pulse width are all configurable.
- Signals such as Trigger, Frame Sync, Ready, Shutter, and Event are available.
- Dedicated trigger, SDI, and analog BNCs.

### 10G ETHERNET

- Supports IEEE 1588 (PTPv2) time code.
- Rugged IP68 RJ45 connector.

### NVMe SSD

- U.2 NVMe drives provide for fast, long-term, and cost-effective storage that is readily available.
- Write speeds allow for either immediate backup of the image buffer or significant capture rates directly to the SSD.
- The .SLOW files stored on a drive can be viewed in a standard OS environment.
- Every E9-80S includes a ~1.6TB drive, drive tray, and USB-C dock.

### SLOW SOFTWARE

- Clean, intuitive control and monitoring of live cameras.
- Playback from the image buffer, on-board SSD, or local .SLOW files.
- Windows, MAC OS, and Linux Compatible.
- The .SLOW format contains both RAW image data and metadata.
- Conversion of .SLOW to common video and image formats such as .AVI and .TIFF

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