

PHARSIGHTED

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

E9•80S

KEY CAMERA FEATURES

Backside-Illuminated CMOS Image Sensor:

640 x 480 pixels at 272,000fps
640 x 384 pixels at 336,000fps
640 x 256 pixels at 492,000fps
640 x 128 pixels at 918,000fps

Maximum Frame Rate:

640 x 32 pixels at 2,457,000fps

Class Leading Light Sensitivity:

ISO 12232 daylight

ISO 160,000 monochrome

ISO 40,000 color

Global Electronic Shutter:

98ns minimum exposure time

342ns 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:

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

| Width x Height | Max Frame Rate | Max Exposure Time (us) | Time (sec) 216GB | Frames 216GB | Time (sec) 432GB | Frames 432GB |
|----------------|----------------|------------------------|------------------|--------------|------------------|--------------|
| 640 x 480 | 272,000 | 3.33 | 2.77 | 753,000 | 5.54 | 1,507,000 |
| 640 x 448 | 290,000 | 3.09 | 2.78 | 808,000 | 5.56 | 1,616,000 |
| 640 x 416 | 311,000 | 2.86 | 2.78 | 868,000 | 5.57 | 1,737,000 |
| 640 x 384 | 336,000 | 2.62 | 2.80 | 941,000 | 5.59 | 1,883,000 |
| 640 x 352 | 365,000 | 2.39 | 2.81 | 1,028,000 | 5.62 | 2,056,000 |
| 640 x 320 | 400,000 | 2.15 | 2.82 | 1,127,000 | 5.64 | 2,255,000 |
| 640 x 288 | 441,000 | 1.92 | 2.84 | 1,245,000 | 5.68 | 2,508,000 |
| 640 x 256 | 492,000 | 1.68 | 2.87 | 1,412,000 | 5.73 | 2,825,000 |
| 640 x 240 | 523,000 | 1.56 | 2.88 | 1,507,000 | 5.76 | 3,015,000 |
| 640 x 224 | 557,000 | 1.45 | 2.90 | 1,616,000 | 5.80 | 3,233,000 |
| 640 x 192 | 641,000 | 1.21 | 2.92 | 1,876,000 | 5.85 | 3,753,000 |
| 640 x 160 | 755,000 | 0.980* | 2.98 | 2,255,000 | 5.97 | 4,510,000 |
| 640 x 128 | 918,000* | 0.549* | 3.07 | 2,825,000 | 6.15 | 5,650,000 |
| 640 x 96 | 1,172,000* | 0.509* | 3.18 | 3,727,000 | 6.36 | 7,455,000 |
| 640 x 64 | 1,619,000* | 0.274* | 3.45 | 5,591,000 | 6.91 | 11,182,000 |
| 640 x 48 | 2,000,000* | 0.156* | 3.73 | 7,455,000 | 7.46 | 14,910,000 |
| 640 x 32 | 2,457,000* | 0.098* | 4.55 | 11,182,000 | 9.10 | 22,365,000 |
| 640 x 16 | 2,457,000* | 0.098* | 9.10 | 22,365,000 | 18.20 | 44,730,000 |



Camera Performance Specifications

| Model | E9-80S |
|--------------------------------|--|
| Full Frame Performance | 272,000fps 640 x 480 pixels |
| Example Frame Rates | 640 x 384 pixels at 336,000fps 640 x 256 pixels at 492,000fps 640 x 128 pixels at 918,000fps |
| Minimum Exposure Time | Global electronic shutter to 98ns selectable independent of frame rate |
| Dynamic Range (ADC) | 9-bit |
| Memory Capacity | 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, 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 |

TECHIMAGING

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SCAN ME

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

