

## Speed, Resolution, and More Speed



The i-SPEED 716 is the value junior sibling in the high-end i-SPEED 7 Series camera line. The i-SPEED 716 caps at 16 gigapixels per second throughput, putting it into the stratosphere of high-speed camera performance at more reasonable prices. The 716 includes the same great features of its big brothers, including 144GB of optional memory, iFocus, iCHEQ, IRIG time code, a rugged environmental package and 12-bit mono/36-bit high resolution images for brilliant imagery.

Each i-SPEED 716 also comes with the i-SPEED Software Suite 2.0. Upgrade to the premium bundle for advanced control, analysis, editing and playback. When your application demands exceptional performance from your camera, the i-SPEED 716 is the ideal partner.



**i-SPEED 716R  
shown in heavy  
duty, rugged  
environmental  
package**

Choose from the sleek new Instrumentation package or elect to upgrade your camera to the high-G rated Rugged package with its environment resistant homogenous aluminum frame.



**Data can be  
transferred by  
fast SSD or Ethernet  
to a PC using the  
i-SPEED Software  
Suite 2.0**

## FEATURES

- High-resolution 2048x1536 pixel sensor
- Full resolution to 5,050 frames/second
- 1080p resolution at 7,540 frames/second
- Up to 144GB of on-board memory
- Ultra-fast 16GP/sec throughput
- Microlens sensor for exceptional light sensitivity
- Wide Dynamic Range recording
- Global Electronic Shutter to 250ns\*
- 1 hour battery life
- Internal or external SSD drive for fast data transfer
- Compatible with all F and EF mount lenses
- Maximum frame rate – 500,000 fps
- Flexible Frame Synchronization from 24 Hz to 500kHz
- Environmentally rugged package available

\* Upgrade

## IMAGER

<b>Sensor type</b>	Custom CMOS
<b>Sensor resolution</b>	2048 x 1536 pixel
<b>Sensor size</b>	27.972mm x 20.736mm
<b>Sensor diagonal</b>	34.82mm
<b>Pixel size</b>	13.5 µm
<b>Bit depth</b>	12bit, 10 bit, 8 bit
<b>ISO</b>	Mono 5000 / 40000 • Color 1800 / 14400
<b>Maximum Frame Rate</b>	500,000 fps
<b>Shutter type</b>	Global Exposure
<b>Shutter time, standard</b>	1µs minimum
<b>Shutter time, fast mode</b>	250ns
<b>WDR</b>	Wide Dynamic Range

## SYNCHRONIZATION and CAPTURE

<b>Trigger</b>	TTL T0 to 0-100%
<b>Trigger modes</b>	Circular, ROC, BROCC
<b>Sync</b>	24Hz – 500kHz
<b>Luminance histogram</b>	Iris setting aid tool
<b>iCHEQ 360</b>	Camera status LEDs
<b>iFocus</b>	Focusing aid tool
<b>iExposure</b>	High/low exposure highlight
<b>Control</b>	PC or CDU
<b>IRIG Input</b>	IRIG – B to sub 2µs
<b>IRIG Sync</b>	Camera sync to IRIG
<b>Internal Memory</b>	36GB standard, upgrade to 144GB

## PHYSICAL and ENVIRONMENTAL

<b>Dimensions inches</b>	14.3 (W) x 6.2 (H) x 6.2 (L)
<b>Dimensions mm</b>	363 (W) x 157 (H) x 154 (L)
<b>Weight</b>	18.7lb (8.5kg) with battery
<b>Input Voltage</b>	12-36V
<b>Power Consumption</b>	150w Nominal, 200w Max
<b>Mounting</b>	¼x20 and 3/8x16 tripod plate
<b>Battery</b>	2x 14.4v 90Wh
<b>Battery life</b>	1 hour
<b>Lens mount</b>	Custom lens plate
<b>EMC</b>	CISPR22 (BS EN55022), CISPR24 (BS EN55024)
<b>Safety</b>	BS EN61010-1
<b>CE Marking</b>	EMC Directive (Camera), LV Directive, EMC Directive (PSU)
<b>Lead Free</b>	RoHS Directive
<b>WEEE</b>	Compliant
<b>IP Rating</b>	IP 20
<b>Temperature °F</b>	32 to 104 operation, -4 to 140 storage
<b>Temperature °C</b>	0 to 40 operation, -20 to 160 storage
<b>Pressure</b>	71 kpa to 106 kpa
<b>Relative Humidity</b>	95% at 104°F non-condensing
<b>G-shock, Instrumentation package</b>	10G
<b>G-shock, Rugged package</b>	30G @ 11ms IEC 68-2-27 Ea, 30G @ 2ms IEC 68-2-29 Eb
<b>Power input connector</b>	6pin Lemo
<b>Trigger input</b>	BNC 75ohm
<b>Feature input</b>	18pin Lemo, Trigger in / Sync in / Sync out / Exposure out / Remote power

## CONNECTIVITY

<b>Video outputs</b>	2x HD-SDI, HDMI
<b>USB</b>	USB 3
<b>Network</b>	1Gb RJ45
<b>CDU</b>	BNC 75ohm
<b>Video</b>	AVI (JPG, BMP), HSV
<b>Image sequence</b>	TIFF, BMP, JPG, RAW
<b>Ethernet control</b>	1Gb
<b>Remote control</b>	Via supplied software

## PC SOFTWARE

<b>Standard Control</b>	Control ONE
<b>Premium Control</b>	Control MULTI-DAQ
<b>Editing</b>	i-SPEED Movie Maker
<b>Analysis</b>	ProAnalyst® Lite by Xcitex
<b>Viewer</b>	i-SPEED Viewer
<b>Utilities</b>	i-SPEED Lens Calculator, i-SPEED Viewer
<b>Software Developers Kit</b>	C++, LabView
<b>Synchronized data acquisition</b>	USB DAQ, 8 options

## PURCHASING OPTIONS

<b>Sensor</b>	Color / Mono
<b>Memory</b>	36GB (Std) / 72GB / 96GB / 144GB
<b>Shutter time</b>	1µs (std) / 250 ns (upon request)
<b>Internal SSD</b>	500 GB / 1TB
<b>External SSD</b>	250 GB / 500 GB / 1TB
<b>Lens mounts</b>	F mount (Nikkor D) / F mount (Nikkor G) C mount / EF mount
<b>Package Type</b>	Instrumentation / Package
<b>Warranty</b>	1 yr (std) / 2 yr / 3 yr

## FRAME RATES, RESOLUTION and DURATION

FPS	Resolution	36GB	72GB	96GB	144GB
100	2048x1536	116 sec	232 sec	308 sec	464 sec
200	2048x1536	57.9 sec	116 sec	154 sec	232 sec
300	2048x1536	38.6 sec	77 sec	102 sec	154 sec
500	2048x1536	23.1 sec	46.3 sec	61.7 sec	93 sec
1000	2048x1536	11.6 sec	23.1 sec	30.9 sec	46 sec
2000	2048x1536	5.8 sec	11.6 sec	15.4 sec	23.2 sec
5,000	2048x1536	2.3 sec	4.6 sec	6.2 sec	9.2 sec
7,700	1920x1080	1.5 sec	3.0 sec	4.0 sec	6.0 sec
10,000	1440x1080	1.5 sec	3.1 sec	4.1 sec	6.2 sec
12,200	1280x1024	1.5 sec	3.0 sec	4.0 sec	6.0 sec
16,000	1280x720	1.7 sec	3.5 sec	4.6 sec	7.0 sec
20,000	1008x732	1.7 sec	3.4 sec	4.5 sec	6.8 sec
30,000	900x512	1.7 sec	3.5 sec	4.6 sec	7.0 sec
50,000	616x432	1.6 sec	3.1 sec	4.2 sec	7.2 sec
100,000	560x222	1.6 sec	3.1 sec	4.2 sec	7.2 sec
200,000	560x102	1.7 sec	3.4 sec	4.5 sec	7.8 sec
300,000	560x66	1.8 sec	3.6 sec	4.7 sec	8.2 sec
500,000	560x30	2.0 sec	4.0 sec	5.3 sec	8.0 sec

Note: Other resolutions and speeds are available.