

## The New Class of High-Speed



The i-SPEED 713 is the ultimate entry point into cutting-edge high-speed capture. Packed with all of the industry-leading features of the i-SPEED 7 Series camera, such as internal battery power, external xSSD recording, remote touch-screen accessibility - and driven by the same massive 3.1 Megapixel sensor, the i-SPEED 713 camera takes you into a whole new league of resolution and speed without sacrificing functionality.

All i-SPEED 7 Series cameras benefit from the industry leading i-SPEED Software Suite 2.0 PC software for control, motion analysis, video editing and playback, which works seamlessly to provide a complete high-speed capture experience.



**i-SPEED 713R  
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 aluminum casing.



**Save and Store  
your video quickly  
and securely with  
1TB hot-swappable  
xSSDs**

## FEATURES + OPTIONS

- High resolution 2048x1536 pixel sensor
- Full resolution to 4,260 frames/second
- 1080p resolution at 6,380 frames/second
- Up to 288 GB of on-board memory for long recordings
- Internal or external SSD drive for fast data transfer
- Ultra-fast 13 GP/sec throughput
- Microlens sensor for exceptional light sensitivity
- Wide Dynamic Range recording
- Global electronic shutter to 1  $\mu$ s
- 1 hour battery life
- Compatible with all Nikon F and Canon EF mount lenses
- Maximum frame rate - 500,000 fps
- Flexible frame synchronization from 10 Hz to 200 kHz
- Environmentally rugged package available
- 32 point integrated real-time health monitoring system

## IMAGER

<b>Sensor type</b>	Custom CMOS
<b>Sensor resolution</b>	2048 x 1536 pixel
<b>Sensor size</b>	27.972 mm x 20.736 mm
<b>Sensor diagonal</b>	34.82 mm
<b>Pixel size</b>	13.5 µm
<b>Bit depth</b>	12 bit (36 bit color)
<b>ISO (12232-2:2006, D, sat)</b>	Mono 5,000 / 40,000 (max) Color 1,800 / 14,400 (max)
<b>Maximum frame rate</b>	500,000 fps
<b>Shutter type</b>	Global exposure
<b>Shutter time, standard</b>	1 µs minimum
<b>Shutter time, fast mode</b>	313 ns
<b>WDR</b>	Wide Dynamic Range

## SYNCHRONIZATION and CAPTURE

<b>Trigger</b>	TTL T0 to 0-100%
<b>Trigger modes</b>	Circular, ROC, BROc
<b>Sync</b>	10 Hz – 200 kHz
<b>Luminance histogram</b>	Iris setting aid tool
<b>i-CHEQ 360</b>	Camera status LEDs
<b>i-FOCUS</b>	Focusing aid tool
<b>i-EXPOSE</b>	High/low exposure highlight
<b>Control</b>	PC or CDUe
<b>IRIG input</b>	IRIG – B to sub 1 µs
<b>IRIG sync</b>	Camera sync to IRIG
<b>Internal memory</b>	36 GB standard, upgrade to 288 GB

## 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>	18.7 lb (8.5 kg) with battery
<b>Input voltage</b>	12-36 V
<b>Power consumption</b>	150 W nominal, 200 W max
<b>Mounting</b>	¼x20 and 3/8x16 tripod plate
<b>Battery</b>	2x 14.4 V 90 Wh
<b>Battery life</b>	1 hour
<b>Lens mount</b>	Custom, swappable lens plate
<b>EMC</b>	EN55032-A, EN55024
<b>Safety</b>	BS EN61010-1 (camera), IEC60950 (PSU)
<b>CE marking</b>	EMC directive (camera), EMC directive, LV 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 60 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>	10 G
<b>G-shock, Rugged package</b>	30 G @ 11 ms IEC 68-2-27 Ea, 30 G @ 2 ms IEC 68-2-29 Eb
<b>Power input connector</b>	6 pin Lemo
<b>Trigger input</b>	BNC 75 Ω
<b>Feature connector</b>	18 pin Lemo, trigger in / sync / sync out / exposure out / remote power

## CONNECTIVITY

<b>Video outputs</b>	2x HD-SDI, HDMI
<b>USB</b>	USB 3
<b>Network</b>	1 Gb RJ45
<b>Video</b>	AVI (compressed or uncompressed)
<b>Image sequence</b>	TIFF, JPG, RAW
<b>Ethernet control</b>	1 Gb
<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>CDUe</b>	Portable Control Unit
<b>Sensor</b>	Color / Mono
<b>Memory</b>	36 GB (std) / 72 GB / 96 GB / 144 GB / 192 GB / 288 GB
<b>Shutter time</b>	1 µs (std) / 313 ns (subject to export restrictions)
<b>Internal SSD</b>	500 GB / 1 TB
<b>External SSD</b>	250 GB / 500 GB / 1 TB
<b>Lens mounts</b>	F mount (Nikkor D) / F mount (Nikkor G) C mount / EF mount
<b>Package type</b>	Instrumentation / Rugged
<b>Warranty</b>	1 yr (std) / 2 yr / 3 yr
<b>Internal Batteries</b>	Set of 2 batteries

## FRAME RATES, RESOLUTION and DURATION

FPS	Resolution	36GB	72GB	96GB	144GB	288GB
100	2048x1536	81 sec	162 sec	216 sec	324 sec	648 sec
200	2048x1536	40 sec	81 sec	108 sec	162 sec	324 sec
300	2048x1536	30 sec	54 sec	72 sec	108 sec	216 sec
500	2048x1536	16.2 sec	32 sec	43 sec	65 sec	130 sec
1000	2048x1536	8.1 sec	16.2 sec	22 sec	32 sec	65 sec
2000	2048x1536	4 sec	8.1 sec	10.8 sec	16.2 sec	32 sec
4260	2048x1536	1.9 sec	3.8 sec	5.1 sec	7.6 sec	15.2 sec
6380	1920x1080	1.9 sec	3.8 sec	5.1 sec	7.6 sec	15.3 sec
10,000	1344x984	1.9 sec	3.9 sec	5.2 sec	7.8 sec	15.6 sec
15,000	1664x798	2 sec	4 sec	5.4 sec	8.1 sec	16.2 sec
20,000	952x672	2 sec	4 sec	5.4 sec	8.1 sec	16.1 sec
30,000	728x546	2.2 sec	4.3 sec	5.8 sec	8.6 sec	17.3 sec
50,000	560x420	2.2 sec	4.4 sec	5.8 sec	8.8 sec	17.5 sec
100,000	560x198	2.3 sec	4.6 sec	6.2 sec	9.3 sec	18.6 sec
200,000	560x84	2.7 sec	5.5 sec	7.3 sec	11 sec	21.9 sec
300,000	560x48	3.2 sec	6.4 sec	8.5 sec	12.8 sec	25.6 sec
500,000	560x18	5.1 sec	10.2 sec	13.6 sec	20.5 sec	41.0 sec

**Note: Other resolutions and speeds are available.**

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