# 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 μs**
- **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

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

## SYNCHRONIZATION and CAPTURE

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

## PHYSICAL and ENVIRONMENTAL

| | |
|---|---|
| **Dimensions inches** | 14.3 (W ) x 6.2 (H) x 6.2 (L) |
| **Dimensions mm** | 363 (W ) x 157 (H) x 154 (L) |
| **Weight** | 18.7 lb (8.5 kg) with battery |
| **Input voltage** | 12-36 V |
| **Power consumption** | 150 W nominal, 200 W max |
| **Mounting** | ¼x20 and 3/8x16 tripod plate |
| **Battery** | 2x 14.4 V 90 Wh |
| **Battery life** | 1 hour |
| **Lens mount** | Custom, swappable lens plate |
| **EMC** | EN55032-A, EN55024 |
| **Safety** | BS EN61010-1 (camera), IEC60950 (PSU) |
| **CE marking** | EMC directive (camera), |
| | EMC directive, LV directive (PSU) |
| **Lead free** | RoHS directive |
| **WEEE** | Compliant |
| **IP rating** | IP 20 |
| **Temperature °F** | 32 to 104 operation, -4 to 140 storage |
| **Temperature °C** | 0 to 40 operation, -20 to 60 storage |
| **Pressure** | 71 kpa to 106 kpa |
| **Relative humidity** | 95% at 104°F non-condensing |
| **G-shock, Instrumentation package** | 10 G |
| **G-shock, Rugged package** | 30 G @ 11 ms IEC 68-2-27 Ea, |
| | 30 G @ 2 ms IEC 68-2-29 Eb |
| **Power input connector** | 6 pin Lemo |
| **Trigger input** | BNC 75 Ω |
| **Feature connector** | 18 pin Lemo, trigger in / sync / sync out / exposure out /remote power |

## CONNECTIVITY

| | |
|---|---|
| **Video outputs** | 2x HD-SDI, HDMI |
| **USB** | USB 3 |
| **Network** | 1 Gb RJ45 |
| **Video** | AVI (compressed or uncompressed) |
| **Image sequence** | TIFF, JPG, RAW |
| **Ethernet control** | 1 Gb |
| **Remote control** | Via supplied software |

## PC SOFTWARE

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

## PURCHASING OPTIONS

| | |
|---|---|
| **CDUe** | Portable Control Unit |
| **Sensor** | Color / Mono |
| **Memory** | 36 GB (std) / 72 GB / 96 GB / 144 GB / 192 GB / 288 GB |
| **Shutter time** | 1 µs (std) / 313 ns  (subject to export restrictions) |
| **Internal SSD** | 500 GB / 1 TB |
| **External SSD** | 250 GB / 500 GB / 1 TB |
| **Lens mounts** | F mount (Nikkor D) / F mount (Nikkor G) C mount / EF mount |
| **Package type** | Instrumentation / Rugged |
| **Warranty** | 1 yr (std) / 2 yr / 3 yr |
| **Internal Batteries** | 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.*

**United Kingdom**
iX Cameras
Bradley House
Locks Hill
Rochford
Essex, SS4 1BB
T: +44 (0) 1702 540 669

**United States**
iX Cameras
8 Cabot Rd.
Suite 1800
Woburn,
MA, 01801
T: 339 645 0778

**China**
iX Cameras
Room 1402, Unit 65,
No 399 Hangting Road,
Oriental Hong Jing Garden,
ZhuQiao Town, Shanghai,
T: +86 186 215 60553

**India**
iX Cameras
J2-101
Swiss County Thergaon
Pune,
411033
T: 0955 256 5021