

Speed, Resolution, and More Speed



The 716 has the same great features as the i-SPEED 7 Series: 12-bit mono/36-bit high resolution images, external swappable 1TB SSD's, i-FOCUS, i-CHEQ, and up to 288 GB of optional memory. The i-SPEED 716 features 16 gigapixels per second throughput along with optional IRIG time code and rugged environmental package.

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 aluminum casing.



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

FEATURES + OPTIONS

- High-resolution 2048x1536 pixel sensor
- Full resolution to 5,315 frames/second
- 1080p resolution at 7,960 frames/second
- Up to 288 GB of on-board memory for long recordings
- Internal or external SSD drive for fast data transfer
- Ultra-fast 16 GP/sec throughput
- Microlens sensor for exceptional light sensitivity
- Wide Dynamic Range recording
- Global electronic shutter to 1 μ s
- 1 hour battery life
- Compatible with all F and 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

SPECIFICATIONS

i-SPEED® 716

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 (Maximum) | Mono 40,000 • Color 14,400 |
| Maximum frame rate | 500,000 fps |
| Shutter type | Global exposure |
| Shutter time, standard | 1 µs minimum |
| Shutter time, fast mode | 289 ns |
| WDR | Wide Dynamic Range |

SYNCHRONIZATION and CAPTURE

| | |
|----------------------------|-----------------------------------|
| Trigger | TTL T0 to 0-100% |
| Trigger modes | Circular, ROC, BROCC |
| 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) RoHS directive |
| Lead free | Compliant |
| WEEE | IP 20 |
| IP rating | 32 to 104 operation, -4 to 140 storage |
| Temperature °F | 0 to 40 operation, -20 to 60 storage |
| Temperature °C | 71 kpa to 106 kpa |
| Pressure | 95% at 104°F non-condensing |
| Relative humidity | 10 G |
| G-shock, Instrumentation package | 30 G @ 11 µs IEC 68-2-27 Ea, 30 G @ 2 µs IEC 68-2-29 Eb |
| G-shock, Rugged package | 6 pin Lemo |
| Power input connector | BNC 75 Ω |
| Trigger input | 18 pin Lemo, trigger in / sync / sync out / exposure out / remote power |
| Feature connector | |

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 Xcitem |
| 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) / 289 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 | 27 sec | 54 sec | 72 sec | 108 sec | 216 sec |
| 500 | 2048x1536 | 16 sec | 32 sec | 43 sec | 65 sec | 130 sec |
| 1,000 | 2048x1536 | 8.1 sec | 16 sec | 22 sec | 33 sec | 65 sec |
| 2,000 | 2048x1536 | 4.0 sec | 8.1 sec | 10.8 sec | 16 sec | 32 sec |
| 5,000 | 2048x1536 | 1.6 sec | 3.2 sec | 5.4 sec | 6.5 sec | 13.0 sec |
| 5,315 | 2048x1536 | 1.5 sec | 3.0 sec | 4.0 sec | 6.1 sec | 12.2 sec |
| 7,960 | 1920x1080 | 1.5 sec | 3.1 sec | 4.1 sec | 6.1 sec | 12.2 sec |
| 10,000 | 1512x1098 | 1.5 sec | 3.1 sec | 4.1 sec | 6.2 sec | 12.4 sec |
| 15,000 | 1232x888 | 1.5 sec | 3.1 sec | 4.1 sec | 6.3 sec | 12.6 sec |
| 20,000 | 1064x762 | 1.6 sec | 3.2 sec | 4.2 sec | 6.4 sec | 12.7 sec |
| 30,000 | 840x624 | 1.6 sec | 3.3 sec | 4.4 sec | 6.6 sec | 13.1 sec |
| 50,000 | 672x456 | 1.7 sec | 3.4 sec | 4.5 sec | 6.7 sec | 13.5 sec |
| 100,000 | 672x216 | 1.8 sec | 3.6 sec | 4.7 sec | 7.1 sec | 14.2 sec |
| 200,000 | 672x96 | 2.0 sec | 4.0 sec | 5.3 sec | 8.0 sec | 16.0 sec |
| 300,000 | 672x54 | 2.4 sec | 4.7 sec | 6.3 sec | 9.5 sec | 18.9 sec |
| 500,000 | 672x24 | 3.2 sec | 6.4 sec | 8.5 sec | 12.8 sec | 25.6 sec |

Note: Other resolutions and speeds are available.



Specifications subject to change
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