# Extreme Performance for Research, Ballistics and Testing
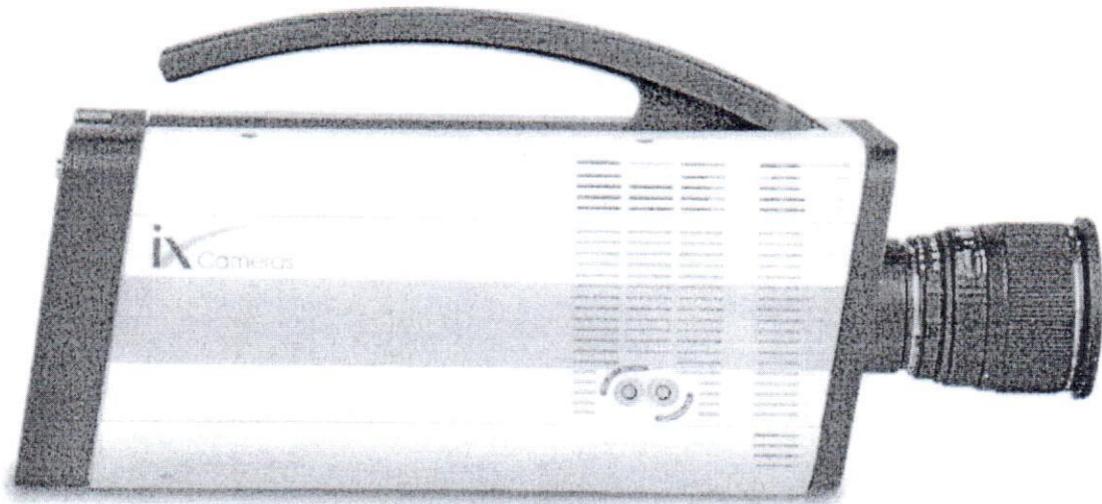
The i-SPEED 720 utilizes the same high-resolution 3.1 megapixel image sensor of the high-end of the i-SPEED 7 Series camera line. Clocking in at 20 gigapixels per second throughput, this camera can stop the world's fastest events. With internal memory options up to 288 GB, the i-SPEED 720 is the ideal instrument for the test engineer, scientist or researcher.

This camera is loaded with innovative features, from the heralded i-CHEQ on-board performance monitoring system to the reinforced internal hardware designed to reduce vibrations during critical testing. The multiple on-board computers move data quickly into internal or external hot-swappable SSD cards for quick review of data.

Each camera is supplied with the industry leading i-SPEED Software Suite 2.0 PC software for control, analysis, editing and playback.
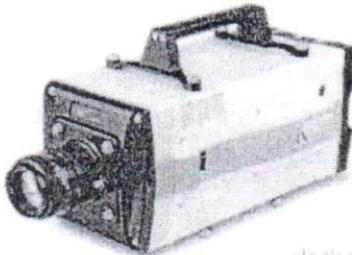
i-SPEED 720R shown in heavy duty, rugged environmental package

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 frame.
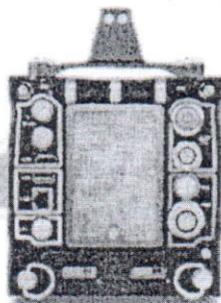
Multiple HDSDI, HDMI and other outputs allow data to flow freely

FEATURES

- High-resolution 2048x1536 pixel sensor
- Full resolution to 6,642 frames/second
- 1080p resolution at 9,942 frames/second
- Up to 288 GB of on-board memory for long recordings
- Internal or external SSD drive for fast data transfer
- Ultra-fast 20 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 F and EF mount lenses
- Maximum frame rate – 750,000 fps
- Flexible frame synchronization from 10 Hz to 200 kHz
- Environmentally rugged package available
- 32 point integrated real-time health monitoring system

 Cameras

ix-cameras.com

IMAGER

Sensor type	Custom CMOS
Sensor resolution	2048 x 1536 pixel
Sensor size	27.9 mm x 20.7 mm
Sensor diagonal	34.90 mm
Pixel size	13.5 μm
Bit depth	12 bit (36 bit color)
ISO (Maximum)	Mono 40,000 • Color 14,400
Maximum frame rate	750,000 fps
Shutter type	Global exposure
Shutter time, standard	1 μs minimum
Shutter time, fast mode	293 ns
WDR	Wide Dynamic Range

SYNCHRONIZATION and CAPTURE

Trigger	TTL 10 to 0-100%
Trigger modes	Circular, ROC, BROC
Sync	10 Hz – 200 kHz
Luminance histogram	bit 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	72 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 157.0 (H) x 154 (L)
Weight	18.7 lb (8.5 kg) with battery
Input voltage	12-36 V
Power consumption	50 W nominal, 100 W max
Mounting	Ax to and sides top plate
Battery	2x 14.4 V 92 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	71.1 kpa to 106 kpa
Relative humidity	95% at 104°F non-condensing
G-shock, Instrumentation package	100 G
G-shock, Rugged package	40 G x6 1 us IEC n6-2-27 Ea
	30 G x2 μs IEC n6-2-29 Eb
Power input connector	5 pin Lemo
Trigger input	BNC 50 Ω
Feature connector	18 pin Lemo (trigger in / sync in / sync out / exposure out / remote power)

CONNECTIVITY

Video outputs	2 x HD-SDI – BNC
USB	USB 3
Network	10G RJ45
Video	AVI compressed or uncompressed
Image sequence	TIFF, JPG, RAW
Ethernet control	1 Gb
Remote control	Via supplied software

PC SOFTWARE

Standard control	i-Control Pro
Premium control	i-Control MDA 1-DAQ
Editing	i-SPEED Movie Maker
Analysis	i-XAnalyse 3™ 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 / 293 ns subject to export restrictions
Internal SSD	500 GB / 1 TB
External SSD	250 GB / 500 GB / 1 TB
Lens mounts	F-mount (Nikon F) / G-mount (Nikon G) /
	C-mount / EF mount
Package type	Instrumentation / Rugged
Warranty	1 yr (std) / 2 yr / 3 yr
Internal Batteries	set of 2 cameras

FRAME RATES, RESOLUTION and DURATION

fps	Resolution	36 GB	72 GB	144 GB	192 GB	288 GB
100	2048x1536	-	110 sec	216 sec	324 sec	648 sec
200	2048x1536		81 sec	108 sec	162 sec	324 sec
300	2048x1536		54 sec	72 sec	108 sec	216 sec
500	2048x1536	-	32 sec	43 sec	65 sec	130 sec
1,000	2048x1536		16 sec	22 sec	32 sec	65 sec
2,000	2048x1536	-	8.1 sec	10.8 sec	16 sec	32 sec
5,000	2048x1536		3.2 sec	4.3 sec	6.5 sec	13 sec
6,642	2048x1536	-	2.4 sec	3.3 sec	4.9 sec	9.6 sec
9,944	1920x1080	-	2.4 sec	3.3 sec	4.9 sec	9.8 sec
10,000	1680x1242	-	2.5 sec	3.3 sec	4.9 sec	9.9 sec
15,000	1344x1008	-	2.5 sec	3.4 sec	5.1 sec	10.1 sec
20,000	1176x864	-	2.5 sec	3.4 sec	5.1 sec	10.1 sec
30,000	952x696	-	2.6 sec	3.5 sec	5.2 sec	10.4 sec
50,000	640x462	-	2.7 sec	3.6 sec	5.3 sec	10.6 sec
100,000	640x216	-	2.8 sec	3.8 sec	5.7 sec	11.4 sec
200,000	640x96	-	3.2 sec	4.3 sec	6.4 sec	12.8 sec
300,000	896x54	-	3.6 sec	4.7 sec	7.1 sec	14.2 sec
500,000	896x24	-	4.8 sec	6.4 sec	9.6 sec	19.2 sec
750,000	280x60	-	4.1 sec	5.4 sec	8.1 sec	16.2 sec

Note: Other resolutions and speeds are available.

The Ultimate High-Resolution, High-Speed Camera
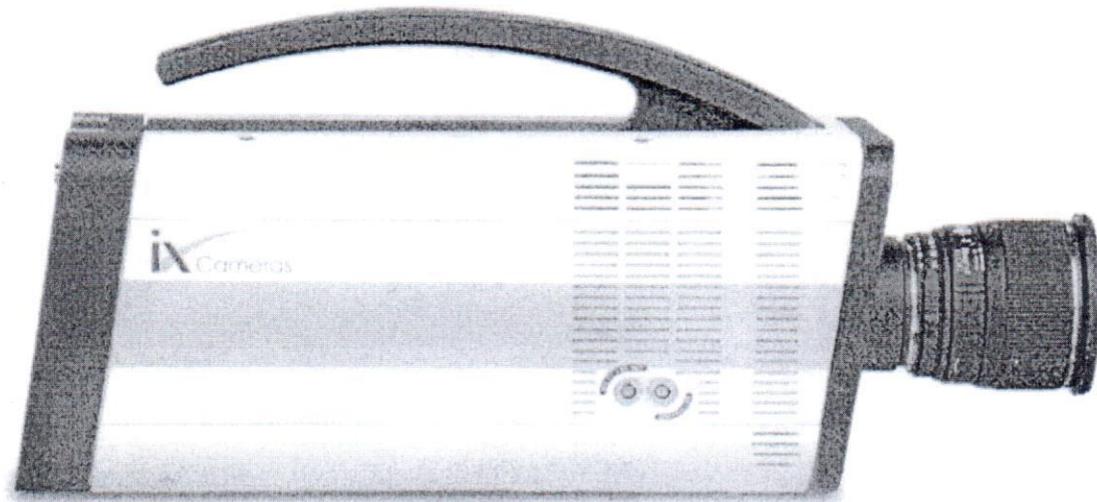
There's only one way to capture the fastest events in the world. That's with the highest resolution, fastest camera ever built.

Experience the i-SPEED 726, the pinnacle of the powerful, high-end i-SPEED 7 Series line of high-speed cameras. Packed with value and suited for a wide range of applications, driven by a whopping 3.1 megapixel image sensor. It's a level of performance that captures more than movement. It captures the imagination.
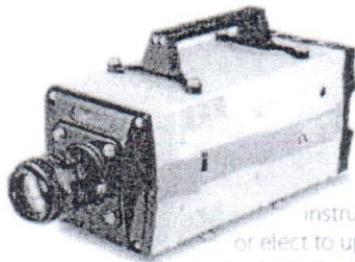
i-SPEED 726R shown in heavy duty, rugged environmental package

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. When the fastest camera is required to capture the fastest events, the i-SPEED 7 is up to the task.
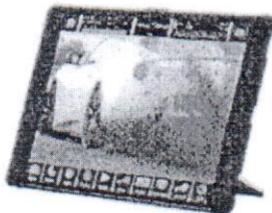
The i-SPEED 726 camera is controlled both by PC and the new 7 Series touchscreen CDUe

FEATURES

- High-resolution 2046x1536 pixel sensor
- Full resolution to 8,512 frames/second
- 1080p resolution at 12,742 frames/second
- Up to 288 GB of on-board memory for long recordings
- Internal or external SSD drive for fast data transfer
- Class leading 26 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 F and EF mount lenses
- Maximum frame rate – 1,000,000 fps
- Flexible frame synchronization from 10 Hz to 200 kHz
- Environmentally rugged package available
- 32 point integrated real-time health monitoring system

iX Cameras

ix-cameras.com

SPECIFICATIONS

i-SPEED 726

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 14,000
Maximum frame rate	1,000,000 fps
Shutter type	Global exposure
Shutter time, standard	1 μs minimum
Shutter time, fast mode	227 ns
WDR	Wide Dynamic Range

SYNCHRONIZATION and CAPTURE

Trigger	TTL 10 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	BNC – B to sub 1 μs
IRIG sync	Camera sync to IRIG
Internal memory	96 GB standard, upgrade to 288 GB

PHYSICAL and ENVIRONMENTAL

Dimensions inches	14.3 (W) x 6.2 (H) x 6.2 (L)
Dimensions mm	364 (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	1x¼ and 3/8x16 tripod plate
Battery	2 x 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	IP20
Temperature °F	32 to 104 operation, -4 to 140 storage
Temperature °C	0 to 40 operation, -20 to 60 storage
Pressure	71.4 to 106 kPa
Relative humidity	95% at 104°F non-condensing
G-shock, Instrumentation package	10 G
G-shock, Rugged package	30 G at 11 ms IEC 68-2-27 (5), 10 G at 2 ms IEC 68-2-29 (1)
Power input connector	6 pin Lemo
Trigger input	BNC 75 Ω
Feature connector	18 pin Lemo trigger in/sync / sync out, absolute 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 Pad
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	96 GB (std) / 72 GB / 96 GB / 144 GB / 192 GB / 288 GB
Shutter time	1 μs std / 227 ns fast shutter (high-spot version)
Internal SSD	512 GB / 1 TB
External SSD	256 GB / 500 GB / 1 TB
Lens mounts	F-mount (Nikon G), C-mount (Nikon G), optional PL 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	96 GB	144 GB	288 GB
100	2048x1536	-	-	216 sec	324 sec	648 sec
500	2048x1536	-	-	43 sec	65 sec	130 sec
1,000	2048x1536	-	-	22 sec	32 sec	65 sec
2,000	2048x1536	-	-	11 sec	16 sec	32 sec
5,000	2048x1536	-	-	4.3 sec	6.5 sec	13 sec
8,512	2048x1536	-	-	2.5 sec	3.8 sec	7.6 sec
10,000	1904x1410	-	-	2.6 sec	3.8 sec	7.7 sec
12,743	1920x1080	-	-	2.5 sec	3.8 sec	7.6 sec
15,000	1512x1134	-	-	2.7 sec	4.0 sec	8.0 sec
20,000	844x978	-	-	2.5 sec	3.0 sec	7.8 sec
30,000	1064x798	-	-	2.7 sec	4.0 sec	8.1 sec
50,000	1064x474	-	-	2.7 sec	4.1 sec	8.2 sec
100,000	1064x228	-	-	2.8 sec	4.2 sec	8.5 sec
200,000	1064x102	-	-	3.2 sec	4.7 sec	9.5 sec
300,000	1064x60	-	-	3.6 sec	5.4 sec	10.8 sec
500,000	232x24	-	-	4.6 sec	7.0 sec	13.9 sec
750,000	120x12	-	-	6.8 sec	10.0 sec	20.0 sec
1,000,000	136 x 42	-	-	4.5 sec	7.0 sec	14.0 sec

Note: Other resolutions and speeds are available.

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Specifications subject to change
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