

Extreme Performance for Research, Ballistics and Testing



The i-SPEED 720 utilizes the same high-resolution 3 megapixel image sensor of the high-end i-SPEED 7 Series camera line, but at tempered speeds. Clocking 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 multi-point 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 homogenous 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
- Ultra-fast 20 GP/sec throughput
- Microlens sensor for exceptional light sensitivity
- Wide Dynamic Range recording
- Global electronic shutter to 289 ns*
- 1 hour battery life
- Internal or external SSD drive for fast data transfer
- 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

* Upgrade

SPECIFICATIONS

i-SPEED. 720

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	Mono 5000 / 40000 • Color 1800 / 14400
Maximum frame rate	750,000 fps
Shutter type	Global exposure
Shutter time, standard	1 µs minimum
Shutter time, fast mode	250 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-EXPOSURE	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 (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 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 ohm
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

Sensor	Color / mono
Memory	72 GB (std) / 96 GB / 144 GB / 192 GB / 288 GB
Shutter time	1 µs (std) / 289 ns (upon request)
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

FRAME RATES, RESOLUTION and DURATION

FPS	Resolution	36GB	72GB	96GB	144GB	288GB
100	2048x1536	-	162 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	840x462	-	2.7 sec	3.6 sec	5.3 sec	10.6 sec
100,000	840x216	-	2.8 sec	3.8 sec	5.7 sec	11.4 sec
200,000	840x96	-	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.



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Specifications subject to change
Document: DS-720-09.26.16
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