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 Nikon F and Canon 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**

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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	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 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	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, 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 @ 11ms 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	1Gb 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) / 293 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	-	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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