

Ultra-Fast Shutter and Top End for the Most Demanding Applications



Versatile and Powerful

The i-SPEED FS camera takes all the features of the versatile and powerful i-SPEED 3 camera and combines them with an ultra-fast 200ns shutter. The short exposure time makes the FS the ideal camera for ballistics and trajectory analysis, fluid flow and other ultra-fast events. The impressive 1.3 megapixel sensor provides large dynamic range even in low light conditions, so it is the ideal camera for short shutter speed.

i-SPEED FS cameras are available for export, restricted due to the ultra-fast shutter and maximum record rates.

FEATURES

- Custom CMOS 1280 x 1024 pixel resolution sensor
- Extreme light sensitivity
- Maximum Frame Rate of 1,000,000 fps
- 200 nanosecond global electronic shutter
- IRIG-B - On board receiver to lock synchronization exposure to sub 5 microsecond accuracy
- Seamless integration with award-winning CDU for remote access
- Random Access Mode for fast external sync
- i-CHEQ externally visible status indicators
- i-FOCUS electronic lens focusing aid
- Economy Mode - 16 x 9 aspect ratio setting 720P
- On board measurement of distance, speed, acceleration, angle, angular velocity, and angular acceleration
- Phase lock auto synchronization of multiple cameras

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IMAGER

Sensor Type	Custom CMOS
Resolution	1280 x 1024
Sensor Size	1.36" (diagonal) 0.847" x 1.06"
Pixel Size	21 micron
Aspect Ratio	5:4
Shutter type	Global Exposure
Shutter time	200 ns
Bit Depth	10 bit
Maximum Frame Rate	1,000,000 fps
Sensor	Sealed unit, no dust ingress
ISO Rating (ISO 12232)	Mono 5,000/Mono 40,000† Color 1,600/Color 12,800†

SYNCHRONIZATION and CAPTURE

Trigger	TTL T0 to 0-100%
Trigger modes	Circular, ROC, BROc
Sync	24Hz – 500kHz
iCHEQ	Camera status LEDs
iFocus	Focusing aid tool
Control	PC or CDU
Internal Memory	2GB standard, upgrade to 16GB

PHYSICAL and ENVIRONMENTAL

Dimensions	4.41" (W) x 5.55" (H) x 13.4" (L)
Weight	11 lb including battery
Input Voltage	14 V -0% to 28 V +5%
Power Consumption	Camera 70 W max/System 80 W max
Mounting	5 x 1/4" Whitworth threads located on three sides
Battery (optional)	Li-Ion, 10.8 V, 45 minutes continuous usage
Lens Mounting	F-Mount
EMC	CISPR22 (B S EN55022), CISPR24 (BS EN55024)
Safety	BS EN61010-1
CE Marking	EMC Directive (Camera), LV Directive and EMC Directive (Power Supply)
Lead Free	RoHS Directive
WEEE	Compliant
IP Rating	IP 20
Temperature	32 °F to +104 °F operation, -4 °F to +140 °F storage
Pressure	71 kpa to 106 kpa
Relative Humidity	95% at 104 °F non-condensing
HG Cameras	100 G @ 11 milliseconds, IEC 68-2-27 Ea 100 G @ 2 milliseconds IEC 68-2-29 Eb

CDU

Dimensions	10.5" (W) x 8.27" (H) x 1.69" (L)
Weight	2.8 lb
Display	8.4" LCD Daylight viewing
Input Voltage	12 V ± 10%
Power Consumption	8 W maximum

PC SOFTWARE

Standard	Control
Premium	ControlPro
Data Collection Module	Optional
Utilities	i-SPEED Lens Calculator, i-SPEED Viewer
Software Developers Kit	C++, LabView



CONNECTIVITY

Video outputs	BNC 50ohm, S-Video
USB	USB 2
Network	100MB RJ45
CDU	BNC 75ohm
Video	AVI (JPG, BMP), HSV
Image sequence	TIFF, BMP, JPG, RAW
Ethernet control	100MB
Remote control	Via software or remote keypad

PURCHASING OPTIONS

Sensor	Color / Mono
Memory	2 GB (Std) / 4 GB / 8GB / 16GB
Package	Standard / Hi-G rated
Warranty	1 yr (std) / 2 yr

FRAME RATES, RESOLUTION and DURATION

i-SPEED FS (HIGH-QUALITY) HQ MODE 4 GB INTERNAL MEMORY

FPS	Resolution	Frames in Memory	Record Time(s)
1	1280x1024	2,447	2447.000
25	1280x1024	2,447	97.880
100	1280x1024	2,447	24.470
150	1280x1024	2,447	16.313
200	1280x1024	2,447	12.235
300	1280x1024	2,447	8.157
400	1280x1024	2,447	6.118
500	1280x1024	2,447	4.894
1,000	1280x1024	2,447	2.447
1,500	1280x1024	2,447	1.631
2,000	1280x1024	2,447	1.224
3,000	1068x800	3,767	1.256
4,000	912x684	5,159	1.290
5,000	804x600	6,672	1.334
10,000	528x396	15,393	1.539
15,000	420x312	24,561	1.637
20,000	348 x 260	35,572	1.779
30,000	264 x 196	62,202	2.073
40,000	216 x 160	93,130	2.328
50,000	180 x 132	135,462	2.709
75,000	132 x 96	253,992	3.386
100,000	96 x 72	465,653	4.657
150,000	60 x 44	1,219,165	8.127

i-SPEED FS (QUALITY WITH SPEED) QS MODE

125,000	84x60	638,625	5.109
150,000	72x52	859,667	5.731

i-SPEED FS (FAST SHUTTER) FS MODE

3,000	1104 x 828	3,521	1.174
5,000	840 x 628	6,101	1.220
10,000	564 x 420	13,587	1.359
40,000	252 x 188	67,937	1.698
75,000	168 x 124	154,502	2.060
100,000	136 x 96	253,992	2.540
150,000	96 x 72	465,653	3.104
200,000	84 x 60	638,610	3.193
500,000	36 x 24	3,725,226	7.450
750,000	24 x 8	16,763,520	22.346
1,000,000	24 x 8	16,763,520	16.764

Note: Record time is directly proportional to memory size

*The CDU is patented in the UK, patents pending in other markets