



High Speed, High Quality Imaging

Standard Set

<i>i-SPEED FS</i> camera	Pickle switch
Power supply	PC software - Control
Gigabit Ethernet crossover cable	Getting started guide
Composite video cable	CF card adaptor
S-Video cable	Battery
<i>i-SPEED FS</i> feature connector cable	Transport case
Mains cable x 3 (UK, USA/Japan, Europe)	

The Controller Display Unit (CDU) is a recommended accessory

Models

Each camera is available as a monochrome or colour unit and has a selectable internal memory size.

Memory size	Record time at full resolution
4 GB Monochrome/HG	1.2 seconds
8 GB Monochrome/HG	2.4 seconds
16 GB Monochrome	4.9 seconds
4 GB Colour/HG	1.2 seconds
8 GB Colour/HG	2.4 seconds
16 GB Colour	4.9 seconds

Memory upgrade is available between units

Features

Resolution	1280 x 1024 @ 2,000 fps
Maximum Frame Rate	1,000,000 fps
Shutter	0.2 µs - automatic electronic individual FPN correction on power up
IRIG-B	On board receiver to lock synchronisation exposure to sub 5 microsecond accuracy
i-CHEQ	Externally visible indicators to confirm camera record status. Positioned on rear of camera
i-FOCUS	Electronic function to confirm focal depth of lens and point of focus. Ideal for ease of camera set up
Luminance Histogram	For precise illumination and image set up
User Settings	Five programmable user settings in camera and infinitely expandable via CF card
Image Processing	Process images before saving via on board editing suite
Image Manipulation	Zoom/Pan/Select region of interest
Measurement	On board analysis function enabling measurement of distance, speed, acceleration, angle, angular velocity, and angular acceleration
Triggering	0-5V TTL, Video Trigger, ROC, BROG
Permanent Text	Burn permanent text onto individual frames
Logo Load	Load corporate logos to personalise cameras and videos
Synchronisation	Phase lock enables multiple cameras to be synchronised to one microsecond accuracy
Image Storage Formats	Raw bayer/AVI/MJPEG
Security Secure	Once powered down, the camera does not retain video images
Random Snapshot	Image capture upon receipt of a synchronisation pulse

Operation

Cameras may be operated as stand-alone units with the patented* CDU or by PC via Gigabit Ethernet connection (see software sheet)

Dimensions	112 mm (W) x 141 mm (H) x 341 mm (L)
Weight	5 kg including battery
Input Voltage	14 V -0% to 28 V +5%
Power Consumption	Camera 70 W max/System 80 W max
Mounting	5 x ¼" Whitworth threads located on three sides
Battery	Li-Ion, 10.8 V, 45 minutes continuous usage
Lens Mounting	F-Mount

Storage Case

Dimensions	560 mm (W) x 270 mm (H) x 450 mm (L)
Weight	8.20 kg without contents

CDU

Dimensions	267 mm (W) x 210 mm (H) x 43 mm (L)
Weight	1.25 kg
Display	8.4" LCD Daylight viewing
Input Voltage	12 V ± 10%
Power Consumption	8 W maximum

Image Sensor

Alignment	Laser aligned at 90°
Sensor Type	Custom CMOS
Resolution	1280 x 1024
Sensor Size	34.423 (diagonal) 21.504 x 26.88 mm
Pixel Size	21 micron
Aspect Ratio	5:4
Shutter	2.16 µs (HQ mode)/1 µs (QS Mode)/200 ns (FS mode)
Bit depth	10 bit
Sensor	Sealed unit, no dust ingress
ISO Rating (ISO 12232)	Mono 5,000/Mono 40,000* Colour 1,600/Colour 12,800* *ISO sensitivity with sensor gains on maximum

Regulatory Compliance

EMC	CISPR 22 (BS EN55022)
Safety	CISPR 24 (BS EN55024)
CE	BS EN61010-1
Lead Free	RoHS Directive
WEEE	Compliant
IP Rating	EN60529
Export restrictions apply	

Operating Environment

Temperature	0 °C to +40 °C operation -20 °C to +60 °C storage
Pressure	71 kpa to 106 kpa
Relative Humidity	95% at 40 °C non-condensing

G Rating

HG Cameras	100 G @ 11 milliseconds	IEC 68-2-27 Ea
	100 G @ 2 milliseconds	IEC 68-2-29 Eb

i-SPEED FS (High Quality) HQ Mode - 4 GB Internal Memory

Frames per Second	Resolution	Frames in Memory	Record Time (s)
1	1280 x 1024	2447	2447.000
25	1280 x 1024	2447	97.880
100	1280 x 1024	2447	24.470
150	1280 x 1024	2447	16.313
200	1280 x 1024	2447	12.235
300	1280 x 1024	2447	8.157
400	1280 x 1024	2447	6.118
500	1280 x 1024	2447	4.894
1,000	1280 x 1024	2447	2.447
1,500	1280 x 1024	2447	1.631
2,000	1280 x 1024	2447	1.224
3,000	1068 x 800	3767	1.256
4,000	912 x 684	5159	1.298
5,000	804 x 600	6672	1.334
10,000	528 x 396	15393	1.539
15,000	420 x 312	24561	1.637
20,000	348 x 260	35572	1.779
30,000	264 x 196	62202	2.073
40,000	216 x 160	93130	2.328
50,000	180 x 132	135462	2.709
75,000	132 x 96	253992	3.386
100,000	96 x 72	465653	4.657
125,000	72 x 52	859625	6.877
150,000	60 x 44	1219165	8.127

i-SPEED FS (Quality with Speed) QS Mode

125,000	84 x 60	638625	5.109
150,000	72 x 52	859667	5.731

i-SPEED FS (Fast Shutter) FS Mode

3,000	1104 x 828	3521	1.174
5,000	840 x 628	6101	1.220
10,000	564 x 420	13587	1.359
40,000	252 x 188	67937	1.698
75,000	168 x 124	154502	2.060
100,000	136 x 96	253992	2.540
150,000	96 x 72	465653	3.104
200,000	84 x 60	638610	3.193
500,000	36 x 24	3725226	7.450
750,000	24 x 8	16763520	22.346
1,000,000	24 x 8	16763520	16.764

Note: Record time is directly proportional to memory size

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

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