DATA SHEET

April, 2018

IL5 / TS5

Wherever high-speed imaging is needed...

- Four models from QSXGA (2560 x 2048) @ 250fps to SVGA (800 x 600) @ 1650fps--all with faster frame rates at lower resolutions
- Control via powerful FasMotion Software on PC or Mac or via built-in web interface
- Flexible recording and triggering modes to assure you capture every shot, every time
- Multiple built in non-volatile storage devices, including optional SSDs with up to 2TB capacity allow you to shoot and save your high-speed video quickly and securely without downloading to a computer

Several models to choose from, all very well suited for product-line machine troubleshooting...

IL5 models are compact and economical. Perfect for integrating into machinery and for lab and machine development work.

TS5 provides high-speed video capture and slow-motion playback with minimal setup. With its internal battery and touch-screen display, the TS5 is literally high-speed imaging in the palm of your hand!

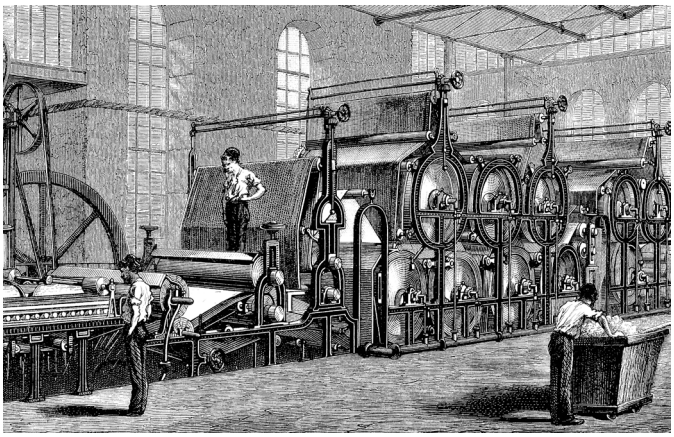
5MP CMOS sensor with global shutter and 5mm pixels has excellent sensitivity and dynamic range assure the greatest system performance and imaging characteristics available in a high-speed camera.

21st Century Solution

Old-fashioned ways of tuning and troubleshooting machinery are simply too wasteful and slow!

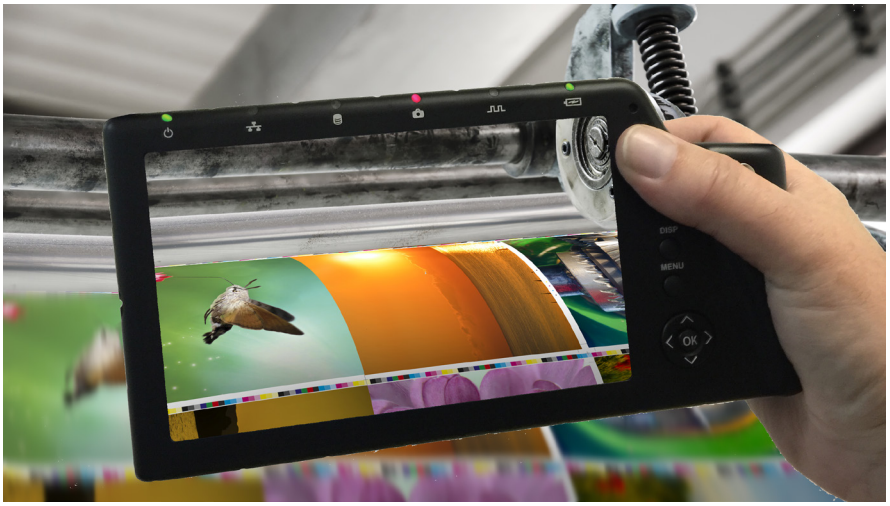
Even machines moving at only moderate speeds are a challenge to troubleshoot or optimize with the naked eye!

Note the large bin full of waste!



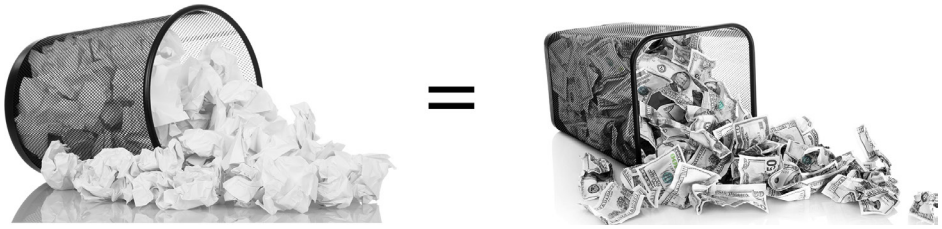
Benefits of High-Speed Imaging

Solve problems more quickly because you can actually see what's happening!



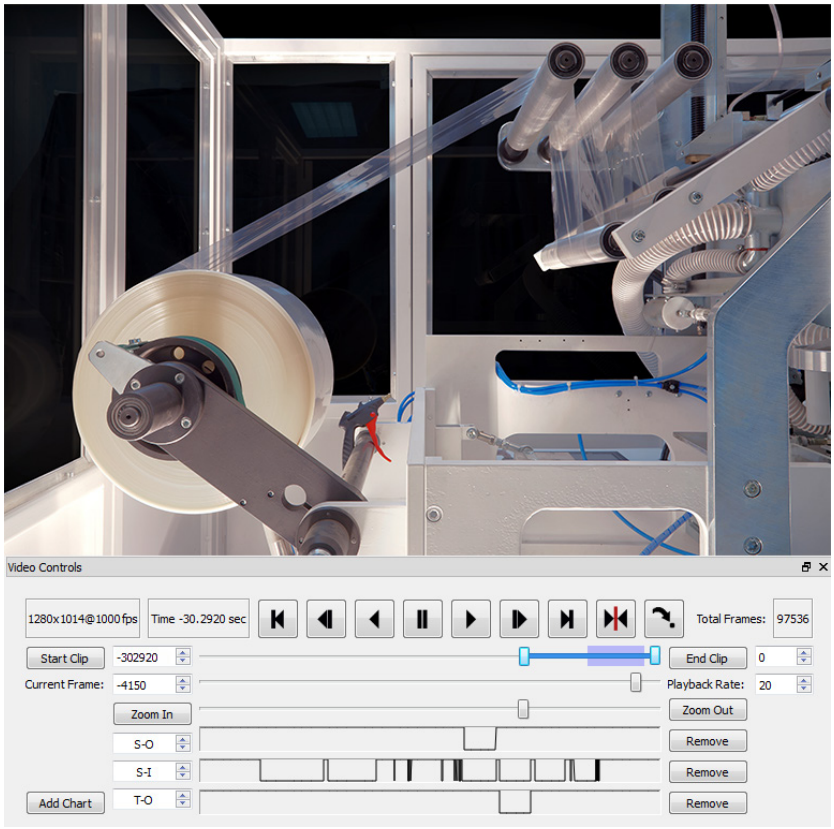
- *Find root-cause of problems*
- *Identify sources of vibration and replace wearing parts before they fail*
- *Reduce material waste*
- *Reduce machine downtime*
- *Increase productivity by running machines at optimal speeds*

Because:



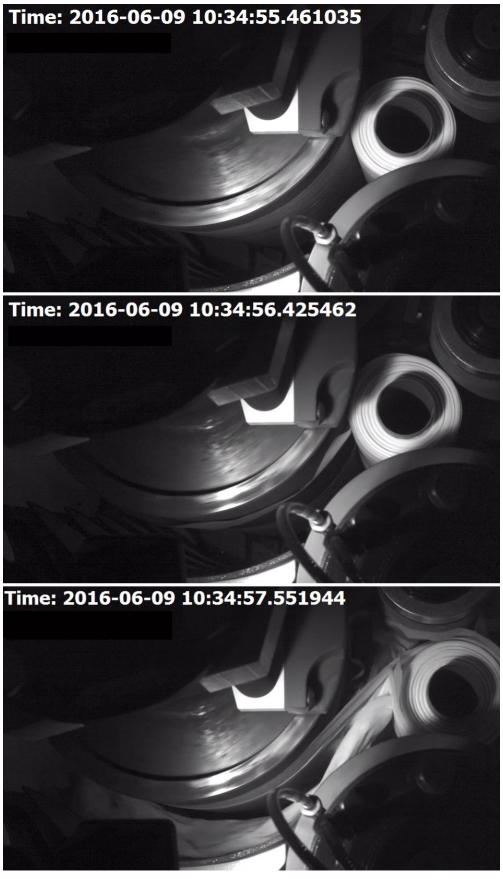
Flexible Recording Modes

IL5/TS5 *are extremely efficient tools for capturing high-speed video, recording exactly what you need, no more, no less.*



Circular buffers capture images before and/or after an event trigger.

- Extended memory buffers make it possible to trigger well after an "event" or problem takes place, then play back slow-motion footage from before and after the problem occurred.
- Tie external control signals to the camera's trigger to evaluate cause and effect relationships.
- Up to six signals may be input directly to the I/O ports. The status of each is recorded for each frame and may be graphically represented during playback.



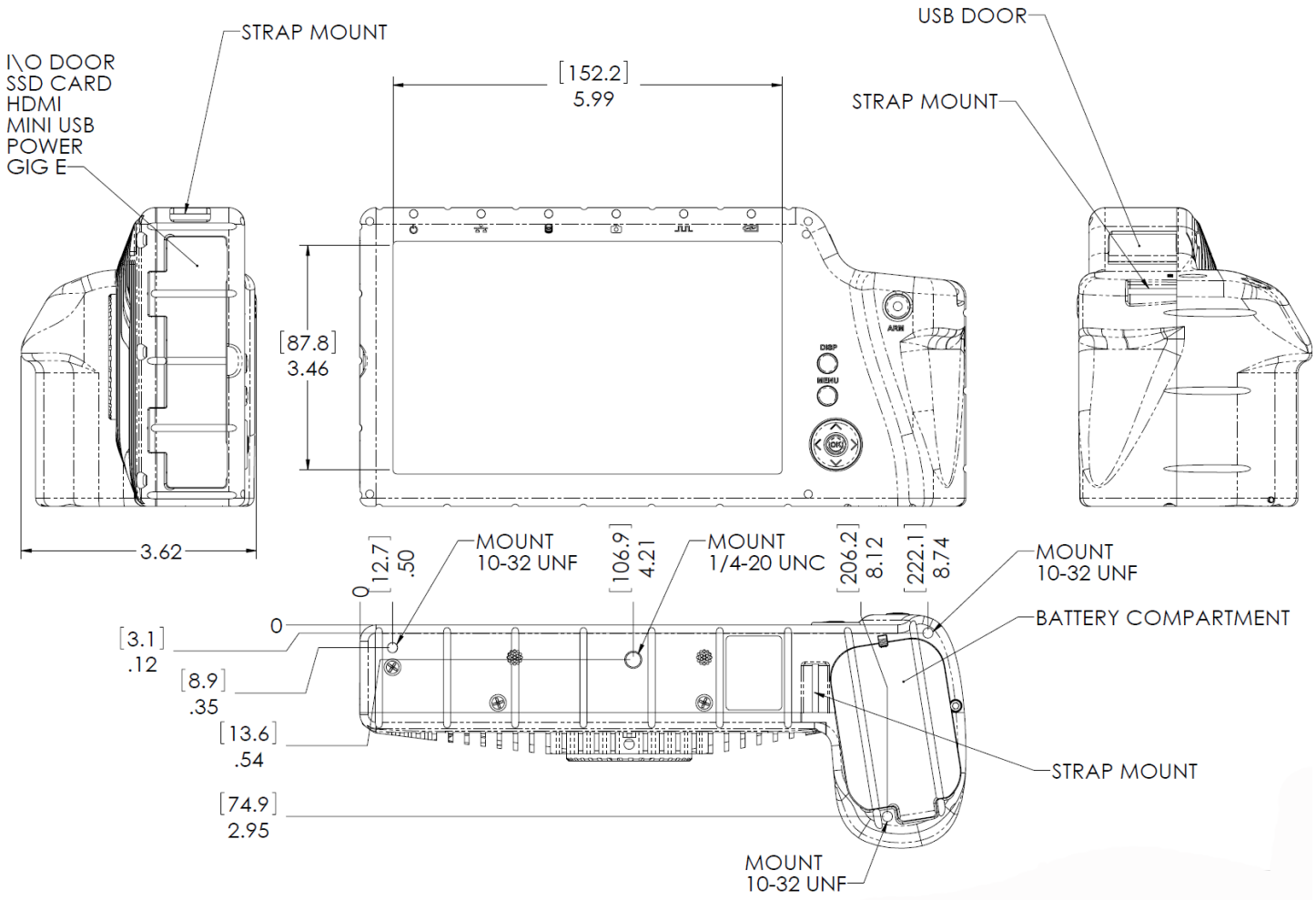
FasFire *automatically saves one clip to onboard storage while continuing to record the next, queueing up as many as 16 partitions at a time. As soon as a partition is saved, its buffer is cleared and becomes available for another recording.*

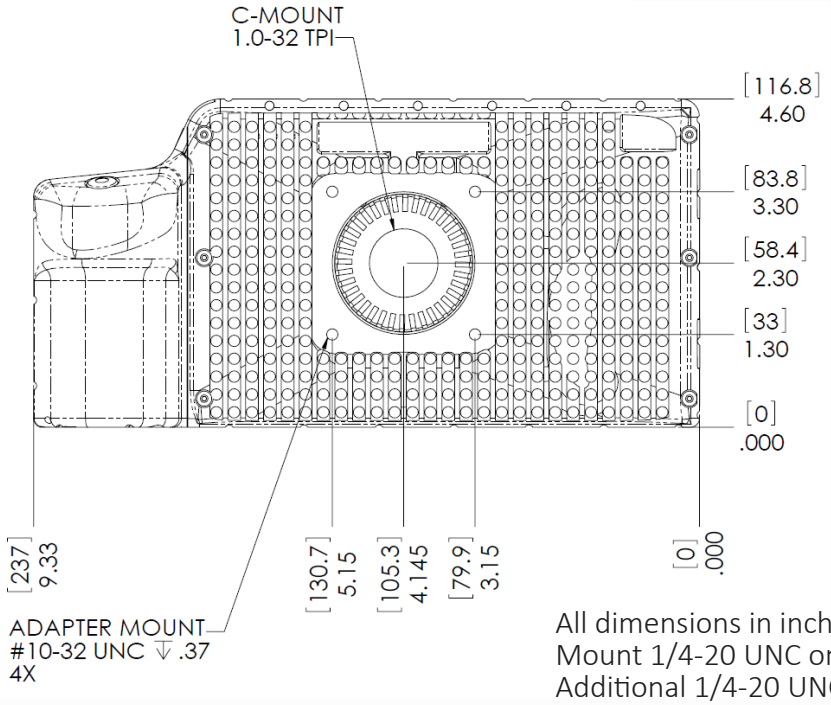
This feature may be particularly useful whenever there are multiple events to record that may occur in succession. Hundreds of events may be captured in this way, depending on the size of the onboard storage device used.

Onboard SSD

Save to an optional SSD (up to 2TB)! Short clips may be saved in seconds, or, with the Long Record option, cameras may stream directly SSD for very long recordings!

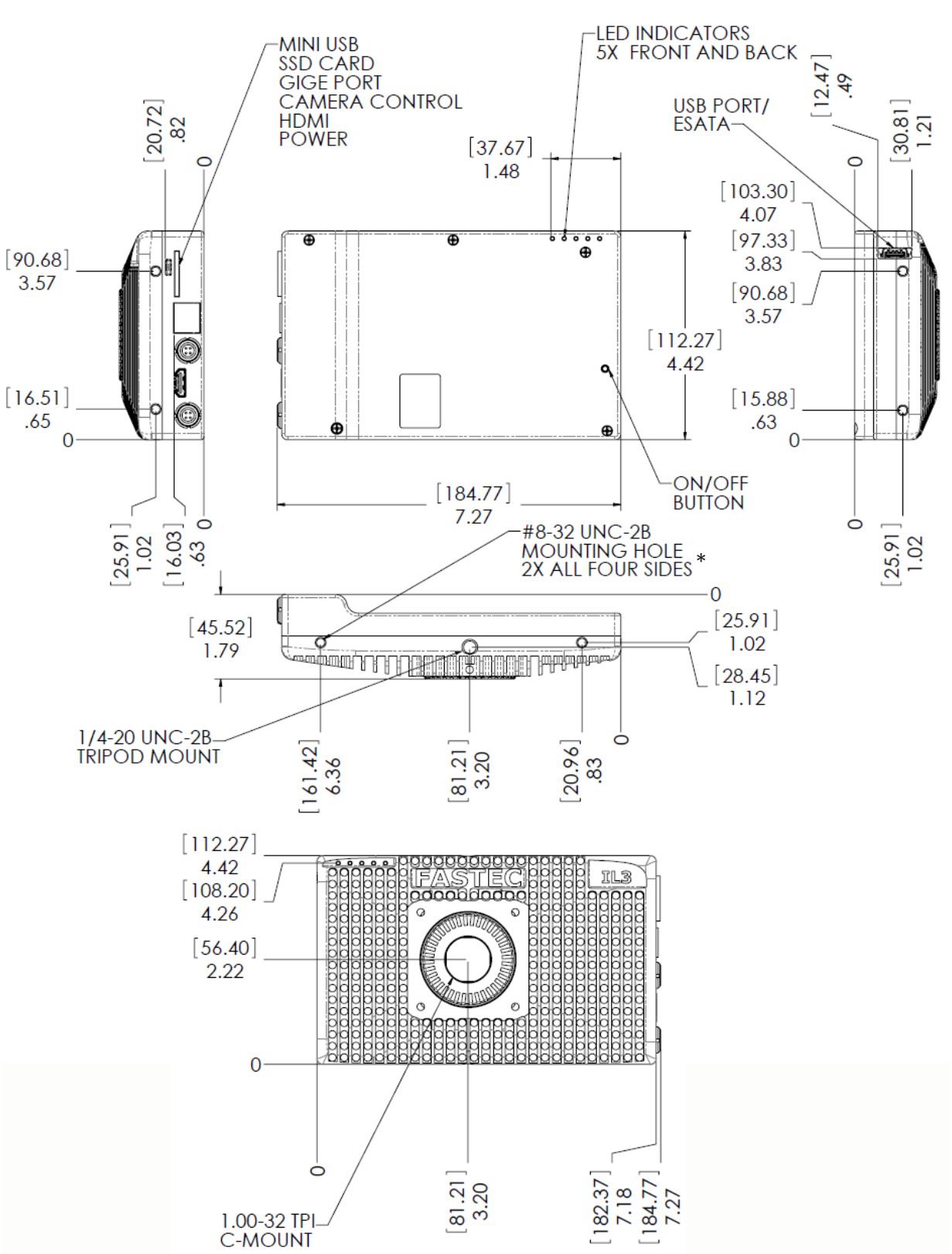
TS5 Dimensions





All dimensions in inches and [ ]mm.
Mount 1/4-20 UNC on bottom is for tripod.
Additional 1/4-20 UNC is located on the top of the camera.

IL5 Dimensions



All dimensions in inches and [ ]mm.
Mount 1/4-20 UNC on bottom is for tripod.
Additional 1/4-20 UNC is located on the top of the camera.

*On request 8-32 helicoils may be installed at the factory before the camera is shipped

Recording Rates and Time

Normal Mode*

	Resolution	Max Frame Rate	Recording Time
TS5/IL5-Q: QSXGA	2560 x 2048 (QSXGA)	253 fps	6.3 sec
	2560 x 1440 (QHD)	359 fps	6.3 sec
TS5/IL5-H: HD 1080p	1920 x 1080 (HD: 1080p)	634 fps	6.5 sec
	1440 x 1080	634 fps	8.5 sec
TS5/IL5-S: SXGA	1280 x 1024 (SXGA)	991 fps	6.4 sec
	1280 x 1014	1001 fps	6.4 sec
	1280 x 720 (HD: 720p)	1403 fps	6.5 sec
	1000 x 1000	1015 fps	8.2 sec
	1024 x 768 (XGA)	1316 fps	8.1 sec
TS5/IL5-L: SVGA	800 x 600 (SVGA)	1677 fps	10.4 sec
	800 x 450	2221 fps	10.5 sec
	768 x 576	2764 fps	6.8 sec
	640x480 (VGA)	3289 fps	8.3 sec
	512 x 384	4061 fps	10.5 sec
	320 x 240	6267 fps	17.4 sec
	64 x 32	29090 fps	2min 19 sec

Long Record Mode**

	Resolution	Max Frame Rate	Recording Time
TS5/IL5-Q: QSXGA	2560 x 2048 (QSXGA)	91 fps	34.9 min
	2560 x 1440 (QHD)	130 fps	34.7 min
TS5/IL5-H: HD 1080p	1920 x 1080 (HD: 1080p)	231 fps	34.7 min
	1440 x 1080	308 fps	34.7 min
TS5/IL5-S: SXGA	1280 x 1024 (SXGA)	366 fps	34.7 min
	1280 x 1014	369 fps	34.7 min
	1280 x 720 (HD: 720p)	520 fps	34.7 min
	1000 x 1000	478 fps	34.7 min
	1024 x 768 (XGA)	610 fps	34.7 min
TS5/IL5-L: SVGA	800 x 600 (SVGA)	993 fps	34.7 min
	800 x 450	1331 fps	34.7 min
	768 x 576	1084 fps	34.7 min
	640x480 (VGA)	1562 fps	34.7 min
	512 x 384	2441 fps	34.7 min
	320 x 240	5000 fps	42.8 min

All specifications subject to change. All record rates assume 8-bit data.
*Record times assume 8GB of memory. Divide Record times by 2 for approximate 4GB record times.
**LR Record times assume “D” option and 1TB SSD. Divide by 2 for 512GB SSD; multiply by 2 for 2TB SSD.

TS5 Specifications

Standard Features

System Design	Handheld, battery-powered, portable with touchscreen LCD
Sensor	12-bit CMOS sensor with 5µm square pixels, color or monochrome
Sensor Modes	Standard, binning 2x2 or 4x4; sub-sampling 2x2 or 4x4; Or 2x binning + 2x sub-sampling
Resolution by Model	TS5-Q: QSXGA 2560 x 2048; TS5-H: HD 1920x1080; -S: SXGA 1280x1024; -L SVGA 800x600
Light Sensitivity	1600 to 12,800* ISO monochrome, 800 to 6400* ISO color (depending on mode)
Shutter	Global electronic shutter from 3µsec to 41.654ms
Image Memory	4GB (std.) or 8GB (optional)
Removable Storage	SD card (SDHC: 32GB maximum); USB flash drive
File Formats	Stacks – BMP, DNG (color), JPEG (selectable quality), TIFF, TIFF(raw); Video – AVI (selectable quality (compressed) or un-compressed), CAP(raw); Still – JPEG
Lens Mounts	C-mount (all cameras ship with C-mount), F-mount or PL-mount (optional)
Built-in Monitor	High resolution, 178mm (7") diagonal LCD
Communication Ports	USB 2.0 device port (micro-B), Ethernet (10/100/1000Base-T)
Control Software	Fas*M*otion (PC/Mac application), web interface (web browser on all platforms)
Six External I/O Ports	Trigger In/Out, Sync In/Out, Arm In/Out (LVTTL (3.3V) or switch closure); Any or all of the I/O ports may be used as Marker inputs
Marker Data Views	Camera display info line, playback timeline, Fas*M*otion o-scope mode, XML file
Video Out	HDMI (1080p30, 1080p60, 720p, 480p)
Construction	Anodized machined aluminum housing
Power	Rechargeable Internal Li-ion battery or 10-26 VDC external
Power Consumption	42W maximum
Operating Environment	+5˚C to +40˚C
Size and Weight	228mm (9.0") W x 114mm (4.5") H x 89mm (3.5") D. 1.8 Kg (3.9 lbs.)

Optional Features

WiFi	802.11 b/g/n, Security: open, WEP, WPA(2) - PSK
Built-In Storage	Solid State Drive (SSD): 256GB, 512GB, 1TB, 2TB
Long Record "D" Option	Streams uncompressed video to SSD at 480MB/sec; 8GB mem. + SSD required; ships with an external battery pack

*Higher ISO settings available via bit-shifting and analog gains result in lower SNR. Binning modes reduce noise.

Fastec Imaging
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San Diego, CA 92127 USA
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Sensor Modes	Standard, binning 2x2 or 4x4; sub-sampling 2x2 or 4x4; Or 2x binning + 2x sub-sampling
Resolution by Model	IL5-Q: QSXGA 2560 x 2048; IL5-H: HD 1920x1080; IL5-S: SXGA 1280x1024; IL5 -L SVGA 800x600
Light Sensitivity	1600 to 12,800* ISO monochrome, 800 to 6400* ISO color (depending on mode)
Shutter	Global electronic shutter from 3µsec to 41.654ms
Image Memory	4GB (std.) or 8GB (optional)
Removable Storage	SD card (SDHC: 32GB maximum); USB flash drive
File Formats	Stacks – BMP, DNG (color), JPEG (selectable quality), TIFF, TIFF(raw); Video – AVI (selectable quality (compressed) or un-compressed), CAP(raw); Still – JPEG
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Video Out	HDMI (1080p30, 1080p60, 720p, 480p)
Construction	Anodized machined aluminum housing
Power	10-26 VDC external
Power Consumption	22W maximum
Operating Environment	+5˚C to +50˚C
Size and Weight	184mm W x 112mm H x 50mm D. 1 Kg (2.2 lbs.)

Optional Features

WiFi	802.11 b/g/n, Security: open, WEP, WPA(2) - PSK
Built-In Storage	Solid State Drive (SSD): 256GB, 512GB, 1TB
Long Record	Streams uncompressed video to SSD at 480MB/sec; 8GB mem. + SSD required; ships with an external battery pack

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