

# S-MIZE HD High Speed Camera



## S-MIZE HD – the rugged, ultra compact high speed camera

**G-rated for automotive on-board testing, certified for use in shock and vibration applications. A robust high sensitivity camera for demanding applications where small size is a key factor.**

The S-MIZE HD is particularly suited for all applications where a compact, portable, high resolution and robust camera is essential. The highly light sensitive sensor and the sophisticated image quality algorithm embedded in the camera suit the most ambitious application. The S-MIZE HD is designed and certified to withstand G-forces in excess of 100 G/10 msec / all axes and spikes up to 200 G. Offering a wide range of signals for external control or feedback on camera status during tests the S-MIZE HD is a genuine all-in-one camera. Fast download of your image sequence is achieved via Gigabit Ethernet. Multiple options are available such as compact flash card in camera and IRIG-B to just name a few.

### Unique features

- **Excellent image quality** – S-MIZE HD cameras incorporate a high-accuracy image algorithm, which is the primary element for superb image quality and proper image format. Image quality is rated amongst best in the industry by users.
- **Ultra compact – all in one** – S-MIZE HD is an ultra-compact all in one camera ready to fit into tight areas where other cameras simply do not. The built-in battery allows camera operation without external power cables and power supplies and insures safe back up of your valuable recorded image data.
- **High sensitivity** – the S-MIZE HD is a very light sensitive camera ideal for recording with less light and shorter shutter times to minimize motion blur of fast moving objects.
- **Extensions** – S-MIZE HD offers a variety of options and extensions. Recording synchronized to IRIG-B time base or download images to built-in flash memory card interface are some examples.

# S-MIZE HD – Key Specifications

## Image format vs frame rate

<b>Image Format vs max. fps</b>	1920 x 1080 @ 1000 fps	1024 x 1024 @ 2000 fps	1280 x 720 @ 2500 fps	853 x 480 @ 5000 fps
<b>Recording Times</b>	1.3 GB memory: 2 sec	2.6 GB memory: 4 sec	5.2 GB memory: 8 sec	10.4 GB memory: 16 sec

fps = max fps @ format, fps adjustable by software in steps of 1 fps.

## Optical/Sensor specifications

<b>Image Sensor</b>	CMOS Sensor
<b>Image Formats</b>	Formats supported: 1920 x 1080 / 1024 x 1024 / 1280 x 720 / 853 x 480
<b>Light Sensitivity</b>	ISO 3200 (monochrome), ISO 2400 (color)
<b>Dynamic Range</b>	10 Bit, scalable 5-8-10 Bit
<b>HDR Mode</b>	Built-in High Dynamic Range Mode (HDR) for higher image dynamic up to 12 Bit, user adjustable by slider in control software
<b>Pixel Correction</b>	Built-in pixel correction for highest image accuracy
<b>Shutter Type</b>	Global, independent of frame rate
<b>Exposure Time</b>	Free adjustable from 2 µsec to 1 / framing rate by software
<b>Lens Mount</b>	C-Mount or optional F-Mount

## Camera and control features

<b>Image Memory</b>	Standard: 1.3 GB, optional 2.6 / 5.2 / 10.4 GB
<b>Nonvolatile Memory</b>	Optional flash card interface for up to 64 GB flash disk in camera. Camera can save image data on flash disk w/o PC attached
<b>Power</b>	9–16 VDC / 12–15 Watts depending on options and extensions Optional: 24–36 VDC
<b>I/O Tolerance</b>	TTL level, all I/O, 0–24 V tolerant
<b>LED Control</b>	LED on back and front indicates camera status
<b>Reset</b>	Reset function to reset camera status w/o affecting image memory
<b>Power On/Off</b>	Switch on/off, Remote Switch on
<b>Battery 180° Version</b>	Re-chargeable NiMH battery inside for up to 15 min autonomous operation of camera
<b>Battery 90° Version</b>	Re-chargeable NiMH battery inside for up to 30 min autonomous operation of camera
<b>Trigger Delay</b>	Programmable up to 65 sec
<b>Trigger Windowing/De-bouncing</b>	User programmable trigger window to eliminate false triggering by external devices
<b>Trigger Modes, Positions</b>	Pre-post recording, freely adjustable in steps of 1% of total camera memory
<b>Timing</b>	High precision time base, temperature compensated
<b>Multi-Buffer</b>	Split buffer for up to 32 individual sub-buffers
<b>Auto-Download</b>	Auto download to PC for 24/7 recording or automatic download to optional flash card until flash card full
<b>Pre-Program of Camera</b>	S-MIZE HD may be preprogrammed with a specific set of commands. Ideal when camera can no longer be accessed before test and switch on is possible only by remote switch on.
<b>OSD</b>	Information on camera, recording features, time stamp, and event marker may be added in image data, Position of OSD is set by user.

## Imaging studio features

<b>Imaging Studio</b>	Software suite to parameterize and control camera, handle data download and conversion of native files into most common single images and movie formats. Runs on Win 7/8, 32/64 Bit
<b>Parameterization</b>	Set all camera parameters for recording by convenient and easy-to-use software interface
<b>Display</b>	Display up to 4 cameras simultaneously in live mode or compare saved sequences with live view of cameras
<b>Editing</b>	Play back, edit and save sequences after recording with few clicks
<b>OSD (on screen display)</b>	OSD with pre-defined information such as camera, resolution fps etc. Free user text input for customer specific comments.
<b>Point &amp; click</b>	Easy point and click measurement and manual tracking features
<b>Export</b>	Export of AOS native files to avi, mpeg, mpeg4, bmp, tif, png, jpg
<b>Image Processing</b>	Manual or automatic color correction and white balance functionality
<b>Batch Converter</b>	Convert native files to movie files using off-line batch conversion

## Data interface

<b>Data Interface</b>	Gigabit Ethernet (10/100/1000) with lockable RJ45 connector Optional: Ethernet on 8 pin LEMO connector
<b>I/O Interface</b>	Solid 14 pin LEMO connector
<b>Synchronization</b>	Sync in / Sync out for phase-locked master-slave operation with other cameras or synchronization to external frequency
<b>Armed Out</b>	Armed out indicates camera is in recording mode and ready to receive trigger
<b>Trigger In</b>	Trigger input, rising, falling edge, TTL, switch closing/opening
<b>Triggered Out</b>	Indicates camera is triggered
<b>Set_To_Rec</b>	Used to set the camera from idle mode into recording
<b>Remote Switch On</b>	Switch on camera by simple 2 wire connection over a distance of up to 100 m (300 feet)
<b>Event Marker</b>	Event marker to record/mark events during image data acquisition.
<b>Strobe</b>	Strobe out to synchronize external equipment to camera. Pulse width represents shutter time

## Physical specifications

<b>Size 180° Version</b>	74 x 71 x 80 mm / 700 gr (1.5 lb) (connectors on the back)
<b>Size 90° Version</b>	95 x 71 x 67 mm / 700 gr (1.5 lb) (connectors on the side)
<b>Operating Temperature</b>	-10 ... +45 °C / +14 ... +113 °F
<b>Storage Temperature</b>	-40 ... +70 °C / -40 ... +158 °F
<b>Shock Resistance</b>	100 G / 10 msec all axis, spikes up to 200 G
<b>I/O Connector (mating required for cable)</b>	LEMO type: FGG.2B.314.CLAD8Z ODU: S22LOC-P14MFG0-8200
<b>CE</b>	In compliance with relevant standards
<b>Mounting</b>	¼" UNC thread, bottom / M6 mounting threads on 4 sides

## Extensions (change of camera size)

		Width x height x length	
		S-MIZE HD 180°	S-MIZE HD 90°
<b>IRIG-B</b>	IRIG-B 122 input for synchronization and/or time stamp	74 x 71 x 80 mm (size unchanged)	95 x 71 x 67 mm (size unchanged)
<b>Flash Card Interface</b>	Flash card interface with card lock and protection cover for up to 64 GB flash card memory	74 x 71 x 90 mm	107 x 71 x 67 mm
<b>Extended Temperature Range</b>	Extended temperature range treatment and test for -40 °C / +55 °C (-40 °F / +130 °F) operation	Size unchanged	Size unchanged



S-MIZE HD 90° with optional flash card interface

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