i-SPEED SERIES

i-SPEED® 2 SERIES

Small, lightweight
high-speed camera.

iX Cameras

POWERFUL, PORTABLE, AND BUDGET-FRIENDLY

UP TO 16GB ON-BOARD STORAGE

2,500 FPS @ 1280 x 864

225,000 FPS MAX FRAME RATE

POWERFUL i-SPEED SOFTWARE SUITE 2.0

GENICAM COMPLIANT

EXCELLENT LIGHT SENSITIVITY

LIGHTWEIGHT AND COMPACT

VIDEO TRIGGER

MULTIPLE TRIGGER MODES

Performance specifications

Compact and budget-friendly, the i-SPEED 2 Series cameras are ideally suited for environments where there is limited space for a high-speed camera installation. Outstanding performance features make i-SPEED 2 cameras excellent analysis tools, producing reliable images regardless of low light conditions and temperature extremes.

	i-SPEED 203
Throughput (Gigapixels / Second)	2.7
Native Image Resolution	1280 x 864
Maximum speed at full resolution	2,500 fps
Maximum speed	225,000 fps
Record memory (Standard / Maximum)	8GB / 16GB
Light sensitivity ISO Mono	6,400
Light sensitivity ISO Color	5,000
Minimum shutter speed	1 µs
Bit depth	8-bit
Pixel size	13.7 µm
PC computer camera control	i-SPEED Control One/Multi-DAQ
Saved formats	TIFF, JPEG, RAW, IXV, AVI
Ethernet connection	1 Gb
Dimensions Inches (L x W x H)	4.7 x 2.6 x 2.6
Dimensions mm (L x W x H)	120 x 65 x 65
Lens mounts	C mount / FG mount

i-SPEED 203—performance in a compact form factor

Sensor

Light-sensitive CMOS sensor delivers excellent light sensitivity and superb image quality with a high level of detail to record and replay most life sciences, robotics, and machinery applications in slow motion.

Compact and robust

The i-SPEED 203 puts slow motion in the palm of your hand. The small form factor fits where other cameras cannot: microscope optical mounts, engine compartments, assembly lines, mounted on machinery, and more.

Up to 16GB memory

With memory levels of 8GB and 16GB, the i-SPEED 203 can capture events of extended durations.

Powerful control software

i-SPEED Control One or Control Multi-DAQ (for i-SPEED 203) has been developed to handle large amounts of data, fast transmission, and ultra-slow motion in captured videos. Menus and workspace are structured for intuitive workflow. Define your trigger setting with just one click, adjust video playback speed, and mark your videos with helpful information such as a time stamp, frame rate, resolution, or trigger information. The user-friendly control software is suited for a wide range of video applications, including manufacturing processes, R&D, testing, robotics, biomechanics, and sports science.

Multiple trigger modes

Trigger events manually, choose post-trigger burst mode, or the optional video trigger.

GenICam compliant

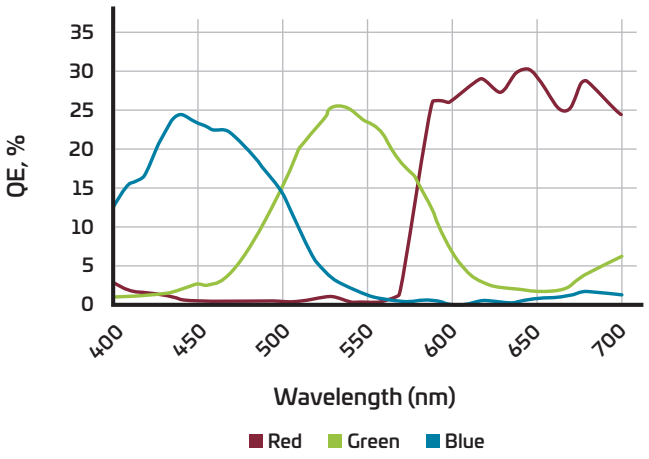
The i-SPEED 203 can be controlled with the global standard GenICam generic programming interface for industrial cameras.

Video trigger

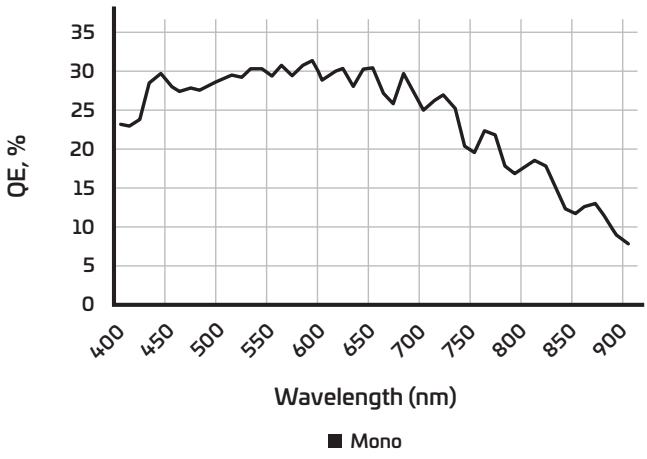
The i-SPEED Software Suite 2.0 video trigger system, available with Control Multi-DAQ, monitors changes in the luminance of a selected area of the scene and triggers when the changes exceed defined levels.

Frame Speed	Resolution	8GB	16GB
2,500	1280x864	2.48	4.96
2,813	1280x768	2.48	4.96
3,000	1280x720	2.48	4.96
4,219	1280x512	2.48	4.96
4,501	1280x480	2.48	4.96
9,002	1280x240	2.48	4.96
16,879	1280x128	2.48	4.96
33,758	1280x64	2.48	4.97
67,516	1280x32	2.48	4.97
90,022	1280x24	2.48	4.97
180,044	1280x12	2.48	4.97
225,000	1280x8	2.98	5.96

203 Quantum Efficiency—Color



203 Quantum Efficiency—Mono



Our cameras set us ahead. Our software sets us apart.

With both versions of the i-SPEED Software Suite 2.0—Standard and Premium—you will experience unparalleled features and the most complete set of functions with a modern and intuitive GUI. Control your camera via Gigabit Ethernet connection—load and control single and multiple camera configurations or connect remotely for uninterrupted access to restricted areas.

Two levels to suit your specific application requirements

- Control ONE: Control a single camera from a laptop or PC.
- Control Multi-DAQ: Control multiple cameras and/or synchronize with data acquisition devices.

Local languages

To accommodate our worldwide customer base, the i-SPEED Software Suite 2.0 will be available in local languages to meet the needs of our global customers.

Video trigger

The latest feature of the i-SPEED Software Suite 2.0, this functionality allows the user to define trigger levels through a manual mode or choose auto mode and have the software calibrate trigger levels. A real-time track mode has been added for triggering the camera in a dynamically changing environment such as cloud cover.

Record

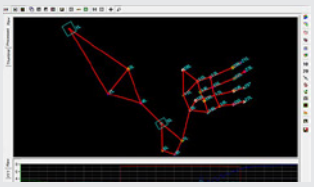
Customized connection and crow's-nest layout window

- Instantly sync and record from multiple cameras.
- Choose multiple configurations of a single camera, or quickly configure a new camera and new capture settings from inside the simplified connection control panel.

Edit

Renderless editing suite—i-SPEED Movie Maker features virtually no render lag

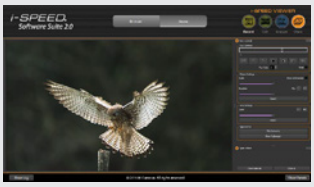
- The world's only editing software designed specifically for high-speed video
- Focuses on frame rate and video speed
- Available with Control Multi-DAQ



Analyze

Your i-SPEED camera becomes a precision measurement device with ProAnalyst® from Xcitex Inc., the world's most advanced motion analysis software

- Analyze, graph, and output speed, acceleration, fluid dynamics, PIV, and more with optional toolkits.
- Available with Control Multi-DAQ



Share

Play just about anything

- View and import saved files directly from the camera.
- Align and play multiple file types.
- Load and control the video and playback speed all without load times—load and play multi-gigabyte files instantly.

Software Developer's Kit (SDK)

iX Cameras will provide the SDK kit and the technical support to customize the software to meet your specific applications needs. We will work with you to integrate program commands into your own software to allow you full control of all i-SPEED 203 camera functions and features.

i-SPEED Software Suite 2.0 features

i-SPEED 203

	Standard Bundle	Premium Bundle
Bundled Software		
Control ONE	■	
Control Multi-DAQ		■
Viewer	■	■
Movie Maker		■
ProAnalyst® by Xcitex Motion Analysis Software (see page 7 for details)	Introductory	Lite
Main Functons		
Language	Local Languages	Local Languages
Simple Mode	■	■
Customizable Workspaces	■	■
Check for Updates	■	■
Camera Connect		
Single Camera Control	■	■
Multi-Camera Control		■
Sync DAQ Control		■
Camera Naming / Positioning / Appearance	■	■
Crow's Nest Test Set-Up View	■	■
Real-Time Camera Health Monitoring System	■	■
Camera Capture		
Low Light Mode	■	■
Calibration Snapshot for DIC / PIV	■	■
Sync Modes	Normal	Normal
Sync	Master / Slave	Master / Slave
Trigger Modes	Normal (Circular)	Normal (Circular), BROC
Video Trigger		■
Software Trigger	■	■
TTL Trigger	■	■
i-CHEQ	■	■
Video Review		
Time Zoom	■	■
Bookmarks	■	■
Measure Window (Angles, Distances)	■	■
Video Processing	■	■
Measure (see next page for details)		
Linear, Distance, and Velocity	■	■
Angular, Angle, and Angular Velocity	■	■
Save		
File Formats	TIFF, JPG, RAW, IXV, AVI	TIFF, JPG, RAW, IXV, AVI
File Name Sequencing for Ingestion Into 3rd Party Software	■	■

ProAnalyst® Motion Analysis Software by Xcitex

ProAnalyst	iX Introductory Toolbox	iX Lite Toolbox
File Management		
AVI, WMF, ASF, CINE, MPED-1, MOV, and MP4 Files	■	■
BMP, JPG, PNG, TIFF Image Sequence Compatibility	■	■
Project-Based File Management	■	■
Video Explorer	■	■
Pack / Unpack Projects	■	■
Image Calibration and Processing		
Look-Up Table (LUT)	■	■
Image Processing		■
Video Timeline	■	■
Layered Display and Editing	■	■
2-D Standard Calibration	■	■
2-D Orthonormal Calibration	■	■
Perspective and Multi-Plane Scene Calibration		■
Video Analysis		
Standard Feature Tracking	■	■
Adaptive Feature Tracking	■	■
Number of Auto-Track Features	Unlimited	Unlimited
Number of Manual Track Points	Unlimited	Unlimited
Real-Time Annotations of Distance and Angle Between Features	■	■
Graphing and Computation		
Standard Data Graphing	■	■
Notes and Reports		
Reports and Presentations	■	■
Tracking Data Export to C3D, Diadem, Excel, MATLAB	■	■
Video Frame, Data Point, and Global Notes	■	■
Image Annotation	■	■

Additional Toolkits

Other toolkits can be added to customize your iX Toolbox.

Feature Tracking

- Full Parametric Feature Tracking
- 3-D Stereoscopy
- 3-D Multi-Camera Arena

Specialty Analysis

- Constrained Edge Tracking
- Particle Tracking
- Contour Tracking
- Particle Image Velocimetry (PIV)
- Cell Tracking
- Impact Excursion

Scene Calibration

- 3-D Stereo Calibration

Image Correction

- Image Stabilization

Data Reduction

- Advanced Data Graphing

Prepackaged ProAnalyst Toolboxes

Specialized toolboxes (toolkit bundles) are available for the following applications:

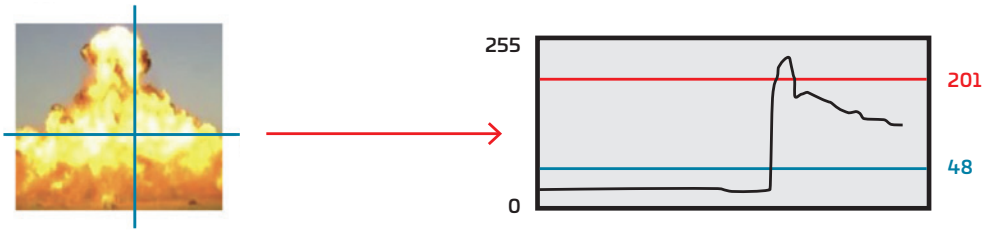
- Animal Biomechanics
- 3-D Animal Biomechanics
- 3-D Human Movement and Sports Science
- Materials Science
- Flow Dynamics
- Shock Impact Dynamics
- Mining
- Machine Vision
- Automotive Crash
- 2-D Ultimate
- 3-D Ultimate

For more information, please visit our software toolkits page.

i-SPEED Software Suite 2.0 video trigger system

A real-time video trigger system has been added to the i-SPEED® Software Suite—for when you can't use a wired trigger, or when you want to use the event itself to trigger the camera recording.

This new system works by monitoring changes in luminance value of a defined location in the camera scene. This feature is available only for the i-SPEED 203 running Control Multi-DAQ.

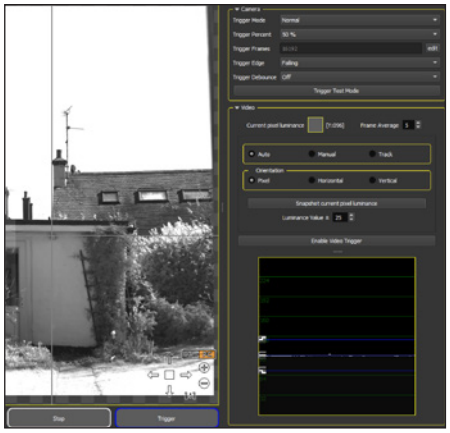


The brightness of the pixel under the reticle is plotted on a graph and if the value goes above or below a user set value then the camera will be triggered.

The new video trigger system has three options, depending on the application.

Auto Mode

Quick and simple setup



Auto mode is a quick and simple way to set up a Video Trigger:

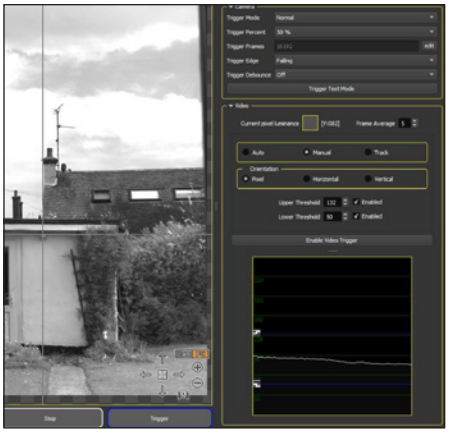
1. Place the reticle on the location where the movement is expected.
2. Snapshot the current pixel luminance.
3. Click **Enable Video Trigger**.

If the value changes higher or lower than the default thresholds of 25, the camera will trigger.

Note: The thresholds can be modified to make the trigger more or less sensitive to luminance changes.

Manual Mode

User-definable trigger levels for more control



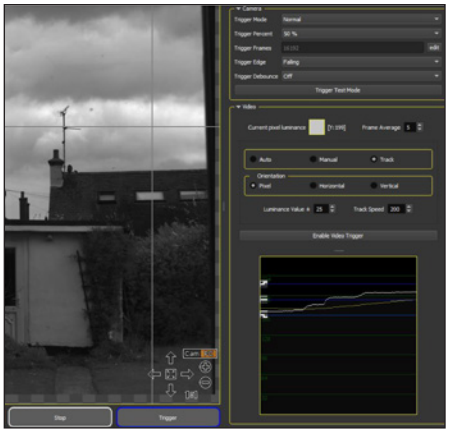
Manual mode provides more control than Auto. For example, the user may only want to run with an upper threshold (trigger on brighter, not darker).

1. Place the reticle on the location where movement is expected.
2. Set or disable the Upper Threshold.
3. Set or disable the Lower Threshold.
4. Click **Enable Video Trigger**.

If the value meets any enabled threshold, a trigger event will occur.

Track Mode

For dynamic changing environments



The Track mode allows the luminance to change slowly without triggering the camera, and only allows a trigger to occur when the luminance changes quickly. An example for use is in an outdoor environment with cloud cover where the ambient brightness will vary slowly.

1. Place the reticle on the location where movement is expected.
2. Set the Upper and Lower Threshold.
3. Set the Track Speed.
4. Click **Enable Video Trigger**.

If ambient brightness changes are too fast and create an unwanted trigger event, then the Track speed can be lowered, allowing the tracking to move more quickly.

Specifications

IMAGER

Frame rate at full resolution	2,500 fps
Shutter	1 µs
Spectral bandwidth	420-700 nm
Maximum resolution	1280 x 864
Maximum frame rate	225,000 fps
Sensor diagonal	21.15 mm
Pixel size	13.7 µm square
Bit depth	8-bit
Light sensitivity	6,400 mono / 5,000 color

SYNCHRONIZATION and CAPTURE

Memory	8 GB / 16 GB
Video	IXV, AVI (compressed or uncompressed)
Image sequence	TIFF, JPEG, RAW

PHYSICAL and ENVIRONMENTAL

Dimensions, inches	2.6 (W) x 2.6 (H) x 4.7 (L)
Dimensions, mm	65 (W) x 65 (H) x 120 (L)
Weight	1.1 lbs (500 g) without lens
Input voltage	10-30 VDC
Power consumption	17 W max
Mounting	¼-20
Lens options	C mount / FG mount
Temperature °F	41 to 122 operation
Temperature °C	5 to 50 operation

CONNECTIVITY

Network	1 Gb RJ45
Power input	5 pin female connector
Trigger	External signal / switch triggering
Input/output	16 pin female
Ethernet	1 Gb
Remote control	Via supplied software

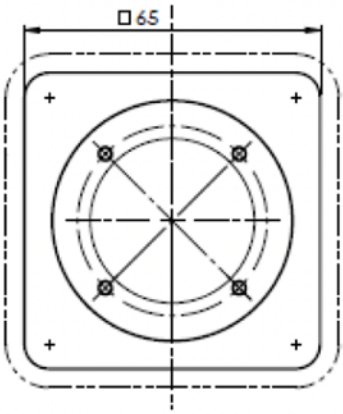
PURCHASING OPTIONS

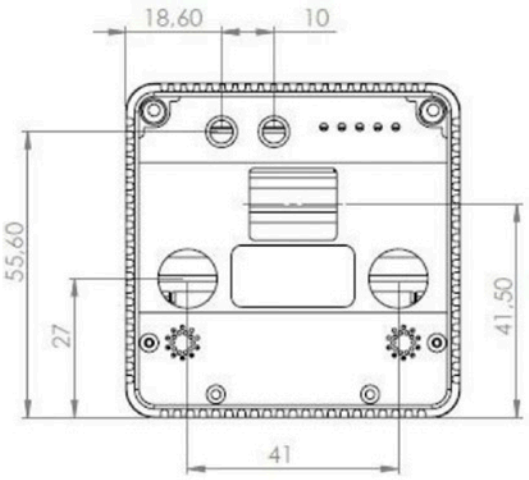
Sensor	Color / Mono
Memory	8 GB / 16 GB
Warranty	1 year standard parts and labor

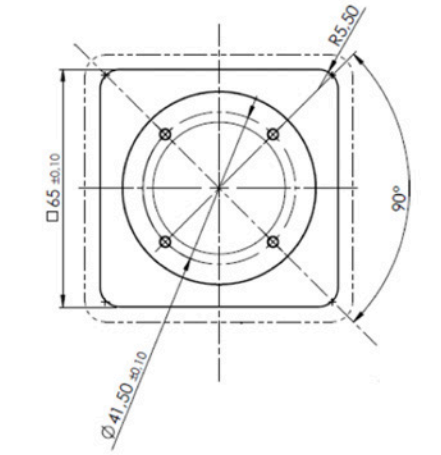
i-SPEED 203 dimensions

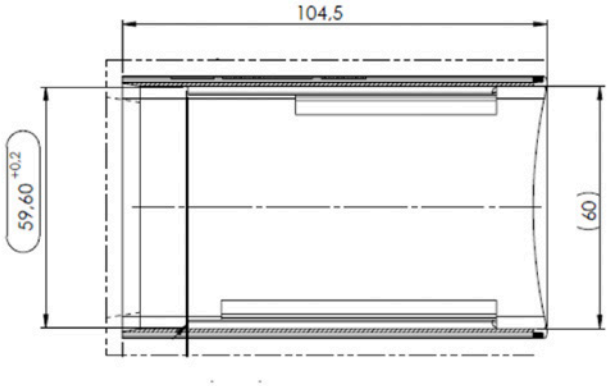
With many applications, the camera is a component in the overall solution. While commercially available accessories can fulfill most requirements, there are always some situations that require a bit extra. This may be as simple as a bracket to mount an accessory to the camera, or as complex as a full OEM system integration. Whatever the requirement, accurate and complete interface data is a must. As such, iX Cameras is pleased to provide another first in our industry by opening access to the CAD model data for the exterior of our cameras.

For more information, please visit our Cameras CAD Models page.









Advanced high-speed cameras for any application

The i-SPEED 2 Series brings portability and power with high performance, lightweight, compact high-speed cameras suited for a wide range of applications.

Assembly Line

Automotive

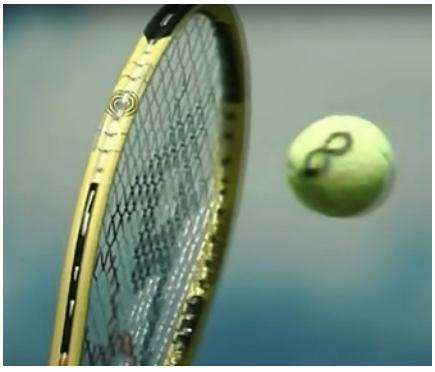
Biomechanics

Drop Test

Industrial

Scientific Research

Sports



A legacy built on innovation

iX Cameras is a world-leading technology and product company specializing in the field of high-speed (slow motion) imaging. Based on proprietary innovative technologies, we design, build and sell cutting-edge ultra-fast cameras and software for a wide range of advanced scientific research applications. Our commitment to innovate and push the boundaries of high-speed video science drives our development of technically superior and easy-to-use products that our customers demand to attain the highest scientific achievements and creativity. The innovation of our i-SPEED brand of cameras is backed by our world-class service and support teams, ensuring our customers' success.

For over a decade, thousands of i-SPEED brand cameras were developed and sold by Olympus until the spinoff of the product development group in 2014. Today, the same development team from Olympus, combined with new camera and software industry veterans, continues to design innovative state-of-the-art i-SPEED cameras under the iX Cameras name.

iX Innovation Centre

We built the Innovation Centre at our Rochford, UK facility to create an environment combining the latest in academic research, industry know-how and practices, and our own engineering team to advance high-speed imaging technology. This holistic collaborative approach brings together people, ideas, and skills from different disciplines and industries to help us design, build, and service the most powerful, feature-rich, and easy to use cameras in the marketplace.

Worldwide Sales Network

iX Cameras sells its products through a worldwide network of dealers. To find the dealer nearest you, please visit our website at ix-cameras.com

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To find the iX Cameras sales partner nearest you, visit our Worldwide Distribution page.

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