

# HS Impact

The High Speed Impact Pressure Imaging System for Helmet & Protective Equipment

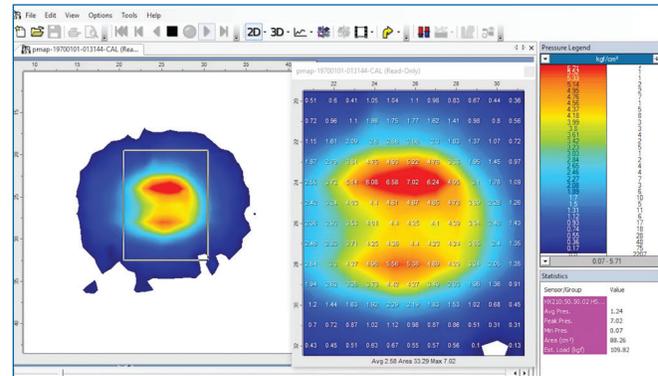
HS Impact provides the ability to test:

- = Helmets
- = Protective Equipment
- = Ballistics

## Measure Product Safety and Performance

Evaluating the performance of helmets and other protective equipment designed to prevent injury requires detailed understanding of the pressure distribution on the body surface during dynamic impacts. XSENSOR's high speed HS Impact system combined with our thin conformable sensors allow you to accurately measure those pressures and evaluate how different design configurations affect pressure distribution on impact.

Acquiring accurate pressure information during sudden impacts requires fast and responsive pressure imaging sensors combined with powerful software tools. HS Impact provides detail on surface pressures before, at, and after impact, allowing engineers to isolate issues and implement effective changes that can then be measured and repeated. Our accurate and reliable sensors measure accurately with repeated impacts without recalibration.



### High Speed Data Capture

HS Impact's HX sensors contain thousands of sensing points that are sampled up to 7500 frames per second.\* Our custom data logger is easily configured and ensures your data is captured.

HX sensors are thin and conformable, with a fast response rate and high-speed calibration that provides consistent and repeatable results on a cell by cell basis so you are able to capture exactly what happens during and after an impact.

### Impact Data Analysis

XSENSOR's feature-rich HS Pro V8 software allows you to view live or post-process and then analyze the data. Recordings can be triggered remotely and synchronized with other high speed data acquisition devices allowing you to:

- View pressure throughout the impact
- See product performance throughout the impact scenario
- Compare designs and modifications

\*Frames per second refers to the actual number of frames of data recorded and those can be viewed with the software. Frame rates estimated using the HS Controller in data logging mode.

From the world leader in pressure imaging.

**XSENSOR**® Technology Corporation

# HS Impact Features

## HX Sensors

- Thousands of high resolution sensing points
- Fast frequency response (3dB point >100Hz)
- Lightweight, highly flexible sensors are less than 1mm thick
- Available in a range of sizes, pressure ranges and resolutions

### Large Area Sensor

#### **HX210:48.64.02**

Sensing Area: 61cm x 81cm (24"x32")  
Resolution: 12.7mm (0.5")  
Pressure Range: 0.007-2.25kg/cm<sup>2</sup> (0.1-32psi)  
Expected Frame Rate: 2,450 fps\*

### Medium Area Sensor

#### **HX210:50.50.05**

Sensing Area: 25.4cm x 25.4cm (10"x10")  
Resolution: 5.08mm (0.2")  
Pressure Range: 0.07-7.03kg/cm<sup>2</sup> (1-100psi)  
Expected Frame Rate: 2,350 fps\*

### Small Area Sensors

#### **HX210:25.50.05**

Sensing Area: 12.7cm x 25.4cm (5"x10")  
Resolution: 5.08mm (0.2")  
Pressure Range: 0.07-7.03kg/cm<sup>2</sup> (1-100psi)  
Expected Frame Rate: 2,900 fps\*

#### **HX210:15.15.05**

Sensing Area: 7.6cm x 7.6cm (3" x 3")  
Resolution: 5.08 mm (0.2")  
Pressure Range: 14.06kg/cm<sup>2</sup> 200 psi  
Expected Frame Rate: 7000 fps\*

## HS Pro V8 Software

- Establishes recording rates and synchronization protocols to generate high speed data acquisition
- Data files recorded to the data logger are downloaded and configured for viewing and analysis
- View data live at frame rates exceeding 1,000 fps (with an Ethernet connection from the data logger)

## HS Data Logger

- Detects user defined trigger condition
- Records data from up to 4 sensor packs to and up to a total 256 x 256 sensing array
- Operates in either streaming via Ethernet from high speed recording internal RAM
- Programmable triggers and pre/post-trigger information (both external signal or pressure threshold triggers are supported)
- Supports autonomous operation
- Rugged electronics, tested at over 50G with no failure

## HS Sensor Pack

- Scans sensor data at up to 8,000,000 sensels/second with 16 bit resolution
- Connects directly to the controller via LVDS signals

## About XSENSOR

XSENSOR has been a leading provider of pressure sensors for more than 20 years. The company's X3 PRO sensors are used in variety of automotive applications including seat design, tire design, wiper design and more.

**XSENSOR**<sup>®</sup> Technology Corporation

[www.xsensor.com](http://www.xsensor.com)

©2017 XSENSOR Technology Corporation. All rights reserved. Reproduction in part or in whole by any means without prior written consent from XSENSOR is forbidden. All trademarks appearing in this document belong to XSENSOR Technology Corporation.

**XSENSOR Technology Corporation**  
133 12 Avenue SE  
Calgary, Alberta T2G 0Z9, Canada  
North America: 403-266-6612  
1-866-927-5222  
Email: [sales@xsensor.com](mailto:sales@xsensor.com)