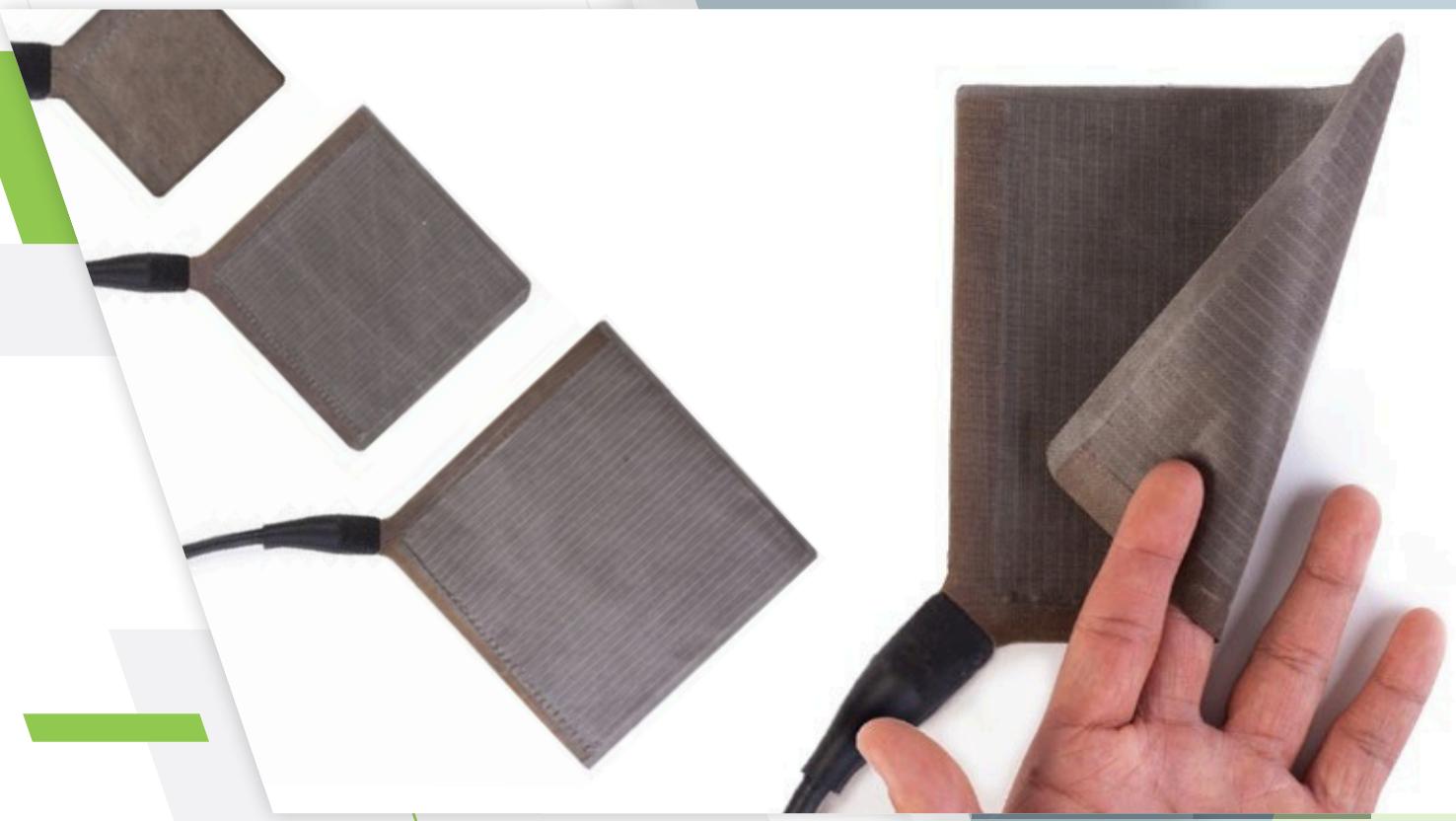


Conformable TactArray

High Performance, Flexible Sensors for Contact Pressure Distribution Mapping

Introduction

INTRODUCTION AND PRODUCT OVERVIEW

TactArray Systems capture pressure distribution between two objects in direct physical contact. By placing TactArray sensors between objects, wrapping them around shapes, or applying them to a flat surface, product developers and researchers can measure and visualize pressure information in their applications.

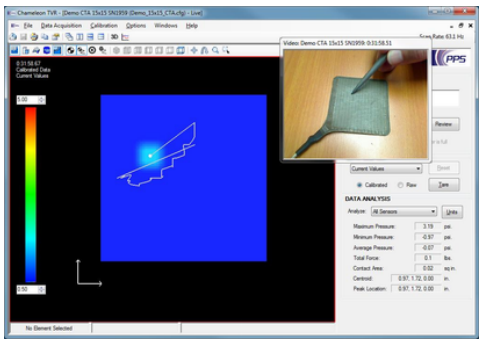
PPS's Conformable TactArray (CTA) Systems are the only soft and flexible pressure sensor on the market offering high sensor performance on multi-curved surfaces.



The system comprises a sensor, the electronics and visualization software (sold separately). The conformable sensor is constructed from soft and flexible conductive cloth that captures pressure changes as low as 10 Pa with high accuracy, even when wrapped around complex geometries.

Available in a wide range of size configurations, pressure ranges, and resolutions for your custom application.





KEY BENEFITS

+ High-resolution even around complex shapes
+ High sensitivity and repeatability for consistent capture of accurate data
+ Improve results due to increased accuracy and reduced recalibration time
+ Provides real-time feedback during design processes

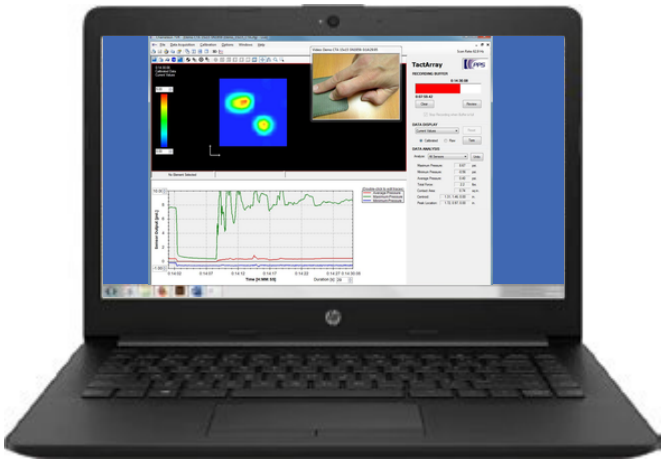
Features & Applications

KEY FEATURES

+ High spatial resolution (2 mm)
+ Cloth-based construction
+ Thin construction (< 1.0 mm thick)
+ Can be used in temperatures between –20°C and 85°C
+ Captures pressures as low as 0.0015 psi (10 Pa, 0.001 N/cm2)
+ Can be built in wide range of active areas (64x64 mm to 320x320 mm)

SOFTWARE

The Chameleon Tactile Visualization and Recording (TVR) software captures and records live data to provide both numeric and visual representation of contact pressures.



APPLICATIONS

As a standalone sensor, the CTA can accommodate simple curvatures. In this format, the cloth-like surface of the CTA is suitable for human skin contact and often integrated into a stretchable cloth band or a mask.

For compound or complex substrates, the sensor can be custom-built (molded onto) the complex surface without compromising data quality.

Example Applications:

+ Measuring contact pressures between wearable devices and the human body
+ Very low pressure applications such as compression stockings
+ Comfort and fit assessment of helmets, goggles, glasses, VR/AR equipment



CTA's are flexible and can be molded over complex shapes like a head

Technical Specifications

SYSTEM COMPONENTS

1. Conformable TactArray Sensor
2. T5000 signal conditioning electronics with USB 2.0

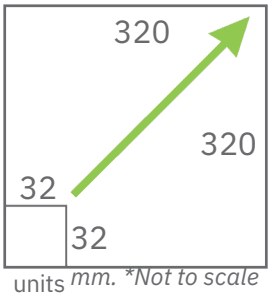
Optional accessories inlude a USB webcam and the API





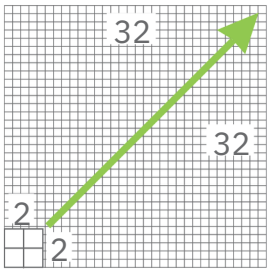
SENSOR MODELS & METRICS

Active Area Sizes



units *mm. *Not to scale*

Array Sizes



units *number of sensor elements*

CTA Sensors are available in square, rectangular and other geometries with varying active areas, resolutions, and array sizes (see left). Individual sensor elements in the arrays vary in size from 2x2 mm to 10x10 mm.

Please visit the PPS catalog online to view all sensor configurations and specifications, or contact us for a custom inquiry.

Sensor Characteristics & Performance*

Full Scale Range	2-80 psi
Thickness	< 1 mm (< 0.04 in)
Signal-to-Noise (SNR)	> 500:1
Minimum Sensitivity	10 Pa (0.0015 psi)
Linearity	99.8%
Gain Non-Repeatability	0.35%
Weight	~ 1.5 lbs (650 g)

Electronic Specifications

Sampling Rate	7-10 Hz, element to element
Interconnect	USB 2.0
ADC Resolution	12 bit
Input Voltage / Power	5 V / 2 W
Operating Tempereature	-20 ˚C to 100 ˚C
Cable Length	59 in (1.5 m)

*Performance numbers are for typical system response.

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