

SYSTEM COMPONENTS

- One headband tactile sensor comprises of two sensors, one on each side of the head, joined by an elastic band
- T4500 interface electronics with USB 2.0
- Chameleon Visualization and Data Acquisition Software
- Synchronized video capture function and hardware
- Remote Installation and Training

PRODUCT OVERVIEW

PPS's Headband Sensor System is a Bike/ski sensor system used for assessing the size adjustment mechanism of helmets, allowing users to measure and visualize pressure points.

Designed for companies that make helmets for ski or bikes, the Headband Sensor System is used by designers looking to balance fit and comfort in their helmet designs. The **Headband Sensor System** allows designers to quantify and visualize contact pressures deploying versatile designs and can accommodate a range of head sizes for mannequins or human subjects.

This is the only sensor technology that can meet the requirements of this application given the requirement to resolve to low pressures and conform to complex shapes around the head without sacrificing accuracy or repeatability performance.

The **Headband Sensor System** includes one headband tactile sensor assembly that consists of two sensors, one on each side of the head, joined by an elastic band.

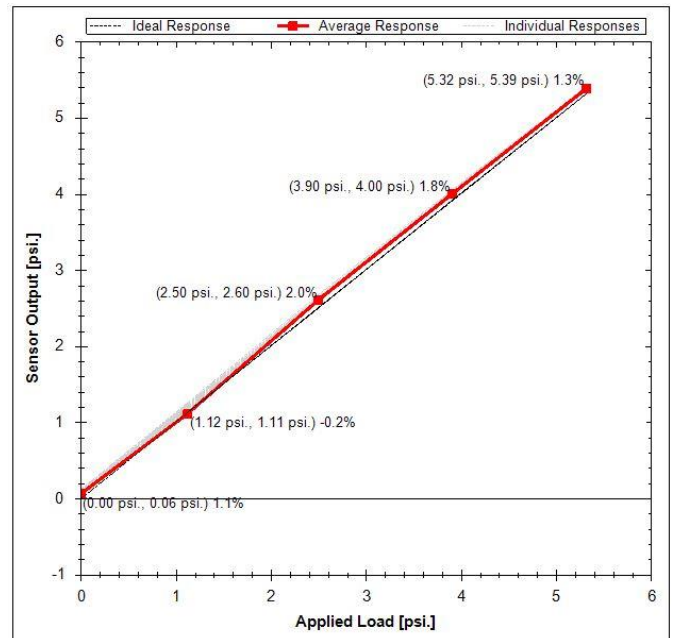
KEY SYSTEM FEATURES AND BENEFITS

- **Sensor design that** creates a sensor pattern that fully covers the headband region for valuable data collection about helmet comfort and fit.
- **High resolution, sensitive and conformable sensor** collects data from curved head shape without sacrificing accuracy or reliability.
- **Sensors can capture extremely low pressures.** Helmet pressures are typically very small but can cause severe discomfort during extended use, so high pressure resolution is needed.
- **Sensors are accurate and repeatable** even for complex head shapes so users can quantify comfort and fit for optimized product design.
- **High performance capacitive sensing technology** saves time and improves results by significantly reducing recalibration and repeated tests allowing developers to resolve problems and answer questions faster.
- **Chameleon Visualization Software** provides intuitive, easy to use, high-quality visualization and easy access to data for analysis and export to other applications.

SENSOR MODELS	
Model Number	5785
Total Sensor Area	590mm x 105mm
Active Sensing Area	520mm x 80mm
Element Count	244 (26x8)
Spatial Resolution	10mm x 10mm

SENSOR CHARACTERISTICS AND PERFORMANCE ¹	
Pressure Range	5 PSI
Pressure Sensitivity	0.1%
Signal to Noise Ratio (SNR)	615:1
Repeatability Error	0.3%
Linearity	99.8%
Accuracy Error ²	<=3%
Contact Surface Material	Spandex
Sensor Thickness	0.04 in (1 mm)
Cable Length	59 in (1.5m)
Operating Temperature	-20°C to 100°C

ELECTRONICS SPECIFICATIONS	
Sample Rate	32Hz
Computer Interface	USB 2.0
ADC Resolution	12 bit
Input Voltage	5V
Input Power	2W
Enclosure Size	6.5x6.2x1 in. (16.5x15.8x2.5 cm)
Weight	1.43 lbs. (650 g)



¹ Performance numbers are for typical system response. Actual performance may vary.

² Measured using PPS standard calibration and test equipment – includes repeatability errors, noise and linearity