

TactileGlove II

Real-World Hand Interactions and Grasp Force Assessment

Introduction

INTRODUCTION AND PRODUCT OVERVIEW

The TactileGlove II with 65 embedded tactile sensing elements throughout the palm and fingers allow natural and accurate measurement of pressures applied to and exerted by the hand. Nearly any hand interaction and operation can be quantified accurately with the TactileGlove. Wireless and battery powered, the TactileGlove is the only pressure measurement glove on the market that enables natural task completion.

High-resolution pressure mapping on the hand allow researchers to understand hand interactions and ergonomics to prevent work related injuries and to design better products.



The accompanying Chameleon Software 2026 captures and records live data to provide both numeric and visual representation of pressures on the hand.



KEY BENEFITS

+ Accurate measurement of pressure exerted by the human hand
+ Produces quantifiable measures of comfort or safety
+ Allows testing in natural environments without restriction of cables
+ Provides real-time feedback during design processes
+ Provides the comfort of regular gloves

Features & Applications

KEY FEATURES

+ High spatial resolution
+ High dynamic pressure range
+ Covers critical areas from palm to fingers
+ Bluetooth 5 Wireless
+ Low-profile and lightweight
+ Conformable, does not impede hand full range of motion







APPLICATIONS

The TactileGlove II empowers designers, engineers, medical professionals and scientists to improve products and heighten human performance through scientific and visual feedback as the human hand interacts with the environment.

Manufacturing Safety & Workers' Comp Assessment:

+ Understanding work activities to prevent injury
+ Grasp force required to use power tools
+ Grasp force required for fine motor activities such as using dental tools
+ Determining if tool modification reduces effort required
+ Quantifying hand strength for return-to-work assessments

Product Ergonomic Design:

+ Quantify what forces people use naturally
+ Determining upper and lower limits of forces generated by the hand
+ Quantify effort to use tools for human factors & ergonomic designs
+ Correlate "feel" of a product in response to controlled design changes
+ Understand hand interactions with competitive products

Technical Specifications

SYSTEM COMPONENTS

1. TactileGlove II or pair
2. Bluetooth 5 Module (2 x per pair)
3. USB Dongle
4. Synchronized Video Camera





INSIDE VIEW

Sixty-five (65) sensing elements embedded within the glove enable pressure mapping across the most important areas of the hand.

SENSOR MODELS AND METRICS

Sensor Characteristics & Performance

Sensing Elements	65 x (5.0 mm × 6.0 mm)
Full Scale Range	80 psi (55 N/cm2)
Maximum Force	Thumb & Finger tips - 70 N Pinky tips - 28 N
Thickness	~ 2.6 mm
Signal-to-Noise (SNR)	> 500:1
Gain Non-Repeatability	< 3%
Linearity	>98%
Minimum Sensitivity	0.04 N

Electronic Specifications

Scan Rate	100 Hz Single or 50 Hz Pair
Interconnection	Wireless Bluetooth 5 - minimum 5 m range
Battery Life	>2 hours
Operating Temperature	5°C to 40°C (static environment)

[1]Performance numbers are for typical system response.

Purchasing Information

SIZING CHART

Size	Circumference (around Knuckles)
Small	17.3 - 18.8 cm (6.8 - 7.4 in)
Medium	18.8 - 19.7 cm (7.4 - 7.75 in)
Med - Large	19.7 -20.5 cm (7.75 - 8.1 in)
Large	20.5 - 21.5 cm (8.1 - 8.46 in)



Circumference measured around your knuckles

ACCESSORIES

PN	Name
7571	BT5 Module
8086	UB5 Dongle

FAQs

1. What is the minimum force sensitivity and mass that the TactileGlove can detect?
   The minimum force that each individual TactileGlove Fingertip Element (38 mm²) can detect is 0.04 N.

2. Is the TactileGlove waterproof?
   No, the TactileGlove is not waterproof.

3. Does the TactileGlove stretch to accommodate variations in hand size and shape?
   The three sizes are carefully designed to cover hand sizes across a broad spectrum. Please choose the correct size based on your hand dimensions.

4. Does the TactileGlove measure pressure or force?
   TactileGlove is calibrated in units of pressure (i.e., psi or N/cm²). Force values are calculated using the known area of the sensor element.

5. Can the TactileGlove detect fast impact loads?
   We do not recommend using the TactileGlove for impact applications.

6. How often does the TactileGlove require calibration?
   The capacitive based sensing modality of PPS sensors results in an extremely stable sensor with superior repeatability. With proper use and care, the TactileGlove should retain its calibration for years.

SAFETY INSTRUCTIONS

- The sensors are not cut-proof - do not use it as such.
- Not suitable for holding hot equipment.
- Do not use around flame.
- Do not overcharge or use third party connectors/chargers.
- Does not contain hazardous substances.
- TactileGlove is of minimal risk to the user.

WARNING: Do not drop, disassemble, open, crush, deform, puncture, shred or microwave TactileGloves. Do not insert foreign objects into any opening on the TactileGlove modules, such as the micro-USB port. Do not use TactileGlove if it has been damaged—for example, if cracked, punctured, or harmed by water. Disassembling or puncturing the integrated battery can cause an explosion or fire.

STANDARDS MET

+ EN 61010-1
+ IC60417-5031 (2002-2010)

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