

The Sparta System - Hardware Guide

Product Description

The Sparta Science force plate (Model SSFP01) measures ground reaction forces and analyzes the sequence in which such forces are applied. The force plate can either be portable (i.e., operating on a hard, flat surface), or fixed installation (i.e., mounted in a frame so that it is even with the floor). For portable models, a mat is used to allow for a flush landing surface on or around the force plate.

Intended Use

The Sparta Force Plate is used to measure human movement capabilities from discrete movement assessments such as jumping, balance, or standing. The measurement of these movements and their characteristics can be used by practitioners to better understand and provide treatment or training plans for individuals.

Indication For Use

The population suffers from injuries daily during normal activity and the prevalence of pain and injury increases in athletes or otherwise active individuals. The majority of movement function tests in use are limited in that they are subjective and qualitative in nature. The Sparta Force Plate provides objective measurement of human movement capability and function can provide clinicians and practitioners additional information to address movement dysfunction or to rehabilitate injuries.

Key characteristics:

- Proven & reliable strain gauge technology
- Capacity of approximately 10,000 Newtons with outstanding accuracy and linearity
- Overload capacity of 150% for static loads (higher for impulse loads)
- 1 kHz sampling frequency



Hardware Setup Guide:

Package contents:

- Sparta Science Force Plate
- USB Cable (10 ft = 3 m)
- Foot grips (x4)
- Isopropyl Alcohol (IPA) wipes* (x2)

Installation:

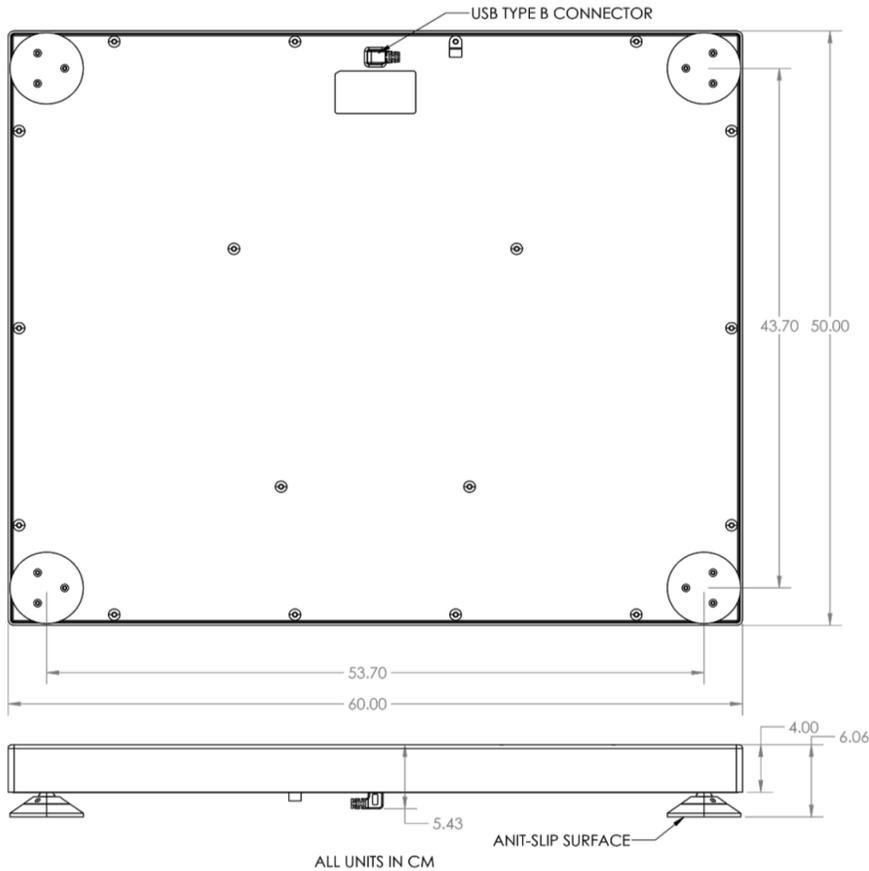
1. Place plate on flat surface such that the plate stable on all four corners.
 - a. If the plate is not stable, please move the plate to a flat area.
 - b. Please do NOT loosen any of the feet to make the plate level. The feet must be securely installed to ensure proper performance and reliability of the force plate.
2. Insert the USB-B connector into the plate, and the USB-C connector into the MacBook or iPad.
3. Please contact your Sparta Customer Success Representative regarding login & product usage.

Foot grips:

The 4 foot grips are provided & to be used on concrete or similar smooth surfaces. We recommend that you do NOT use the foot grips on the soft rubber surfaces commonly found in gyms or fitness centers.

- a. Please test the foot grips on the surface before installing them in order to ensure they do not permanently damage / scratch your floor.
- b. Prior to installing the foot grip, ensure the bottom of the foot is clean from any dirt or debris.
 - Use the isopropyl alcohol (IPA) wipes to clean the bottom of each foot (1 wipe per 2 feet).
 - Allow the IPA to air dry for approximately 1 minute.
 - Peel the protective backing from adhesive on the foot grip. Be careful to NOT touch the adhesive since this can affect the adhesion.
 - Carefully center & apply the foot grip to the bottom of each foot. Apply pressure to the foot grip & push from the center outwards to ensure full contact.

Product Dimensions



Materials

Force Plate: Aluminum
(6061 or ADC12)

Bottom Cover: ABS Plastic
(Acrylonitrile butadiene styrene)

Product Safety Compliance

Conforms to the safety standards:

- UL 61010-1, 3rd Edition
- CSA C22.2 No. 61010-1, 3rd Edition
- EN 61010-1: 2010, 3rd Edition
- IEC 61010-1, 3rd Edition

- EMC standards:
- FCC Part 15, Subpart B
- CAN ICES-3 (A)/NMB-3(A)
- EU/EMC Directive 2014/30/EU
EN61326-1:2013 (Class A, Group 1)

Regulatory Notes

This information corresponds to the current state of knowledge. Sparta Science reserves the right to make technical changes. Liability for consequential damage resulting from the use of Sparta Science products is excluded. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation. This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at own expense. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Technical Data

Model Designation	SSFP01
Width mm (in)	500 (19.75)
Length mm (in)	600 (23.62)
Height mm (in)	57.6 (2.27)
Mass, kg (lb)	13.0 (28.8)
Measuring Range (N)	10000
Safe Overload Fz (N)	150%
Sampling Frequency	1 kHz
Natural Frequency Fx (Hz)	108.7
Natural Frequency Fy (Hz)	118.2
Natural Frequency Fz (Hz)	160.9
Static Resolution Fz, N (lb)	± 0.01
Resolution Fz, N/LSB (lb/LSB) *	0.02
Linearity, %FSO **	± 0.05
Input Voltage (V)	5
Operating current (mA)	~250 ←
Max current (mA)	500
Operating Temperature Range	0-40 C (32-104 F)
Operating Relative Humidity (RH)	30-70%
Operating Altitude	<2000 m
Installation	Portable or Fixed Installation
Packaged Unit:	
Width mm (in)	609.6 (24)
Length mm (in)	708.025 (27.875)
Height mm (in)	158.75 (6.25)
Mass, kg (lb)	15.24 (33.6)

* LSB = Least Significant Bit

** FSO = Full Scale Output (% deviation from linear)

Contact Information

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