



FOODSENSE G4 KIT

General description

Device Name:	Foodsense G4 Kit
Part Number:	ZP1001465
Revision number:	v0

Production description

The ZP Foodsense Kit is a specialized electrochemical measurement device tailored for application within the food and beverages industry. Featuring an integrated potentiostat, this device offers high levels of precision and reliability in data acquisition.

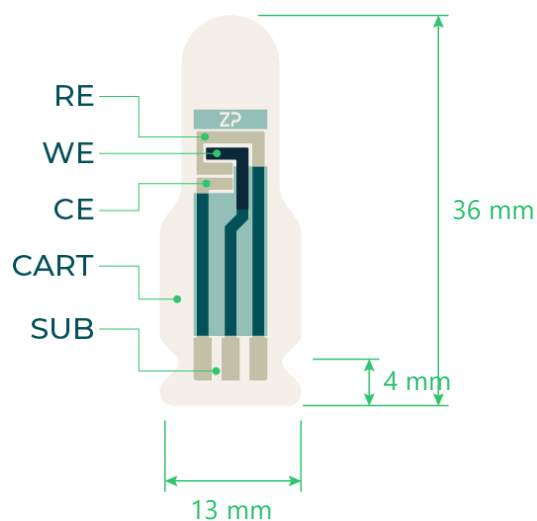
Primarily designed for assessing chili-based products, the Foodsense Kit allows users to measure heat intensity in Scoville Heat Units (SHU) by detecting capsaicin. Additionally, it possesses the ability to analyze other compounds including gingerol, garlic, and turmeric. Recorded results are also given in molarity, parts per million and milligram per liter.

The device seamlessly connects to mobile phone applications on both Android and iOS platforms via Bluetooth, enabling real-time data transmission and control through the SenseltAll application.

Integration with the cloud-based electrochemical analysis platform, Djuli, facilitates advanced data analysis and interpretation.

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Chilli sensor cartridge



Materials

Chilli sensor is based on a PET substrate and has ZP's patented electrochemical formula. The cartridge is made from PLA.

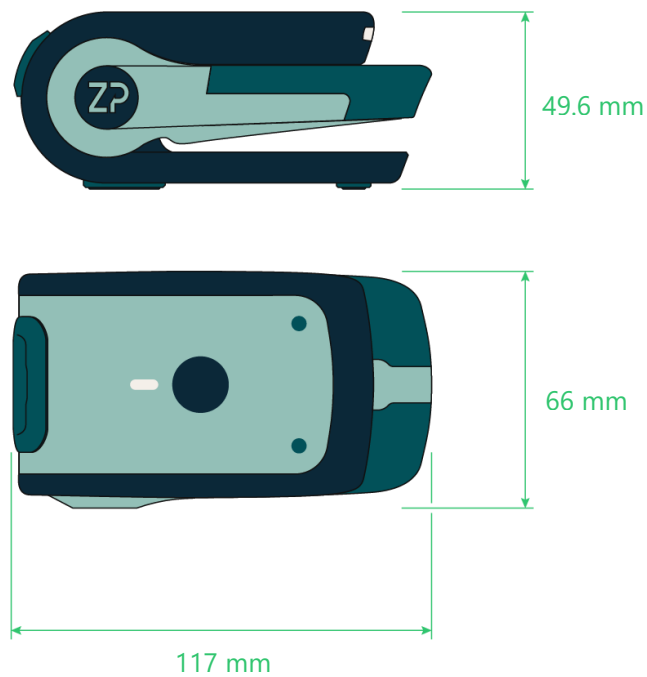
RE	Reference Electrode
WE	Working Electrode
CE	Counter Electrode
SUB	Substrate
CART	Cartridge

Dimensions

Length	36 mm $\pm$ 0.10 mm
Width	13 mm $\pm$ 0.10 mm
Thickness	1.5 mm $\pm$ 0.10 mm
Weight	0.46 g $\pm$ 0.1 g

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SenseltAll instrument



Materials

The mechanical components of the SenseltAll Instrument primarily consist of steel and nylon materials.

Dimensions

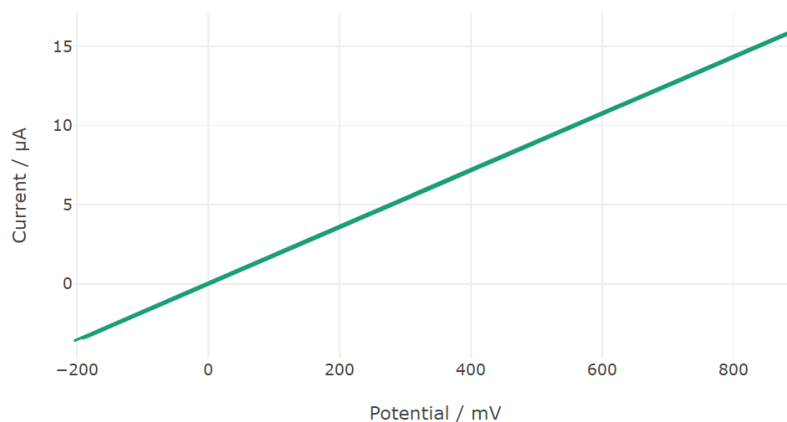
Length	117 mm $\pm$ 0.10 mm
Width	66 mm $\pm$ 0.10 mm
Height	49.6 mm $\pm$ 0.10 mm
Weight	380 g $\pm$ 0.5 g

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Measurement characteristics

Current Range	$\pm 16 \mu\text{A}$
Resolution	0.4 nA
Accuracy	>95 %

Example of a verification curve for the maximum current range measured with a validation resistor.

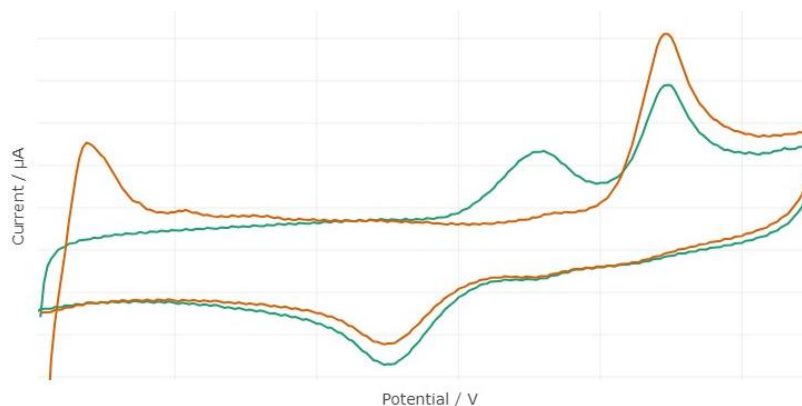


Device characteristics

Rated Voltage	5 V
Rated Current	2 A
Interface	USB Type C Cable
Bluetooth Range (Indoor)	5-10 m

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Performance



For powder samples tested after 14 days of extraction we found a maximum deviation of 9.4%. While our device maintains precision consistently, the accuracy of measurements is influenced by the unique composition of each sample. Due to the wide range of sample variations and the lack of established industry standards for comparison, fluctuations in accuracy may occur.

Components and hazards of sensors

Ingredients to be disclosed according to regulations:

Component	Hazards classification	Weight percent [%]
Silver	H400, H410	1-6 %
Silver Chloride	H400, H410	1-6 %

Take caution when handling these sensors, as there might be sharp parts and hazardous chemicals. Use personal protective equipment. Handle with gloves.

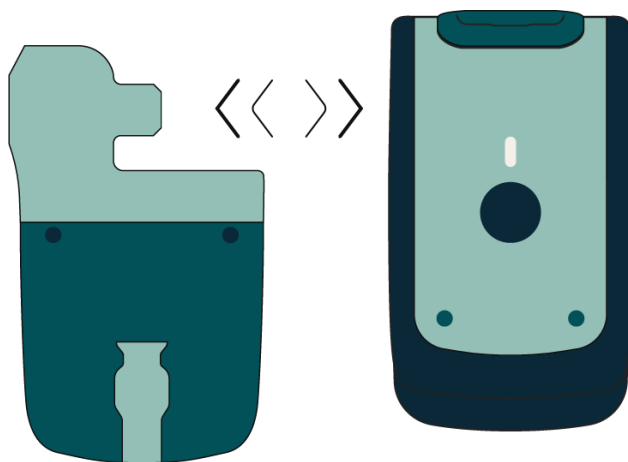
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Storage and Operating Conditions

Recommended storage temperature for sensor cartridges 2-25°C, 20-50% RH. Keep dark, protect from exposure to UV-light. Keep sensor container tightly closed in a dry and well-ventilated place. Proper storage of sensors requires the sensing area to be facing upwards, free from any contact or interference, recommended shelf life of 1 year.

To ensure consistency and minimize measurement variations, it is recommended to maintain a repetitive setup and adhere to a consistent set of actions during usage. This may include standardized environmental conditions.

The device comprises two parts held together by magnets, allowing for easy separation for cleaning in the event of spillage. To disassemble, gently lower the middle part and then slide it out horizontally. Cleaning can be performed using tissues, cloths, or alcohol wipes. When reassembling, use the same horizontal motion to slide the parts back together, ensuring proper alignment.



Disclaimer

Please note that this product is intended solely for research and development applications.

For further information or to discuss specific application requirements, please contact ZP directly.