

CornCounter MW

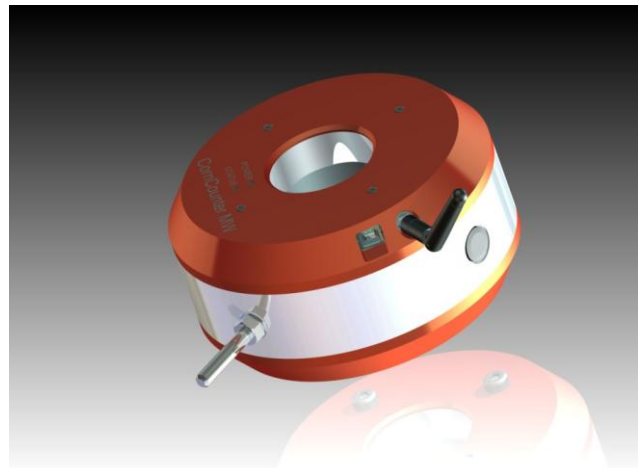
Description

The CornCounter MW, hereafter called "CornCounter", is a device for measuring the statistical distribution of seed planting and drilling under laboratory conditions. Planting accuracy is precisely measured with the CornCounter. Variation of the equipment settings, operating speed, seed treatments, or dusty seeds may influence the planting accuracy.

Interpretation of the results requires some basic understanding of statistical analysis, and experience with the seed metering devices (planters/drills) and the seeds that are analyzed.

Sensor

The sensor concept is based on a micro wave cavity, oscillating at 1.6GHz. A phase locked loop (PLL) is used to detect frequency changes if seed falls through the sensor.



The control voltage of the voltage controlled oscillator (VCO) is amplified and digitized by a microcontroller at 2.5kSPS. The data stream is sent over USB or WLAN to a computer which generates time stamped data of all the seeds falling through the sensor.

Software

The data are then analyzed and statistically visualized on the computer to generate reports and to compare different data sets.

Technical Data

Micro Wave Sensor

Frequency :	1.6GHz
Gain:	26dB
Amplifier Out	6dBm (CW)

Digitizer

Sampling Rate:	2.5kSPS
Resolution:	10 Bit

USB

Revision:	1.1
Speed:	12 MBit/s (Full-Speed)
High Power Device:	500mA
Connector Type:	USB Type B

WLAN

Frequency:	2.402 to 2.480MHz
Wireless Standards:	8.02.11b/g
Output level (class1):	18dBm
Receive sensitivity:	-85dBm

Power

Deep Sleep:	1.5uA
Running on USB	220mA@3.7V
Running on WLAN	245mA@3.7V

Battery

Type:	CS-IPOD4XL
Voltage:	3.7V/900mAh
USB Charging:	100mA/500mA

General

Temperature:	5 to 50°C
Max. Humidity:	80% rel. up to 31°C (not condensing) Linear decreasing to 50% until 40°C
Weight:	1.7kg
Usage:	For indoor use only Up to 2000m above sea level

Dimension

