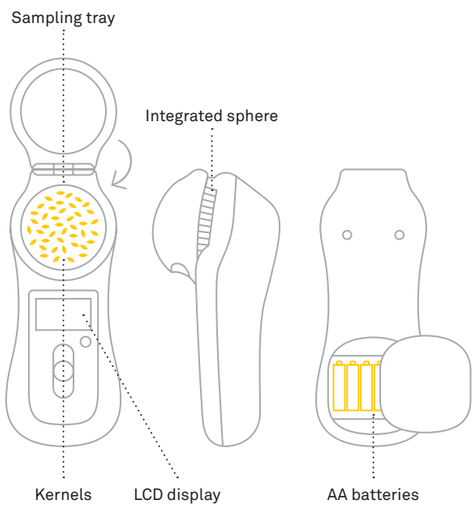
GrainSense
Technical sheet

The handheld GrainSense device measures the quality of cereal grains and other crops in seconds: **protein, moisture, carbohydrates**, and **oil** contents*

* Percentages are calculated on a dry, wet or fixed basis, based on country guidelines.



The technical principle is **Near-infrared (NIR) spectroscopy** in the so-called third overtone wavelength range. This technique has been used in laboratory instruments for years. GrainSense is the first to realize such an instrument in a handheld format.

Because of the **patented sampling technology** (grain inside an “integrating sphere”) the light intensity arriving at the detector is several hundred times higher than otherwise possible. This enables the building of a **small, battery-operated device.**

Technical specifications	
Size	Hand-held (footprint 270 mm x 115 mm)
Weight	820 grams (without batteries)
Batteries	6 x AA Alkaline (recommended to use batteries designed for industrial/heavy use)
Battery operation	50 to 150 measurements depending on battery quality and type of use
Measurement principle	Near infrared transmittance spectroscopy
Sample size	≈ 3 grams (60-80 cereal kernels)
Measurement time	About 30 seconds, including the device warm-up and the user loading the sample
Species	E.g. wheat, barley, rye, oat and rapeseed New species can be added according to needs / Note: Species are country specific
Operational conditions	+5 to +45 C 20 to 90 % RH (non condensing)
Storage temperature	-10 to +60 C
Protection	Designed for outdoor use - except raindrops on the sample tray will affect the moisture result
Bluetooth	LE 4.1
Language	Multiple languages (based on ISO 8859-1 character set)
Mobile application	Android/iOS

Customer support: support@grainsense.com

GrainSense
360° light penetration method (integration sphere)

+ Works with simpler and more affordable technology
+ Device can be small
+ Enables small samples
+ Wider use than grain as other types of samples possible
+ Short measurements time

The key components of the GrainSense solution are the GrainSense device, mobile application, and cloud-based database:

GrainSense Measuring Device | **GrainSense** Mobile App | **GrainSense** Cloud Services

1. GrainSense Device: measures and analyzes the sample and interacts with the GrainSense Mobile application via Bluetooth.

2. Mobile application: connects with cloud account and downloads calibrations and other settings to the Device and uploads measurements results to the database.

3. Cloud based storage: to backup the measurement results.

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