CropScan

KNOW YOUR GRAIN

KNOW YOUR FIELD

CropScan 3000X Grain Analyser

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The CropScan 3000X Grain Analyser is a bench top analyser designed for rapid measurement of protein, moisture, starch and oil in wheat, barley, corn, soybean, canola, oats, triticale, lupins and other cereals grains and oil seeds.

Features: CropScan 3000X Grain Analyser

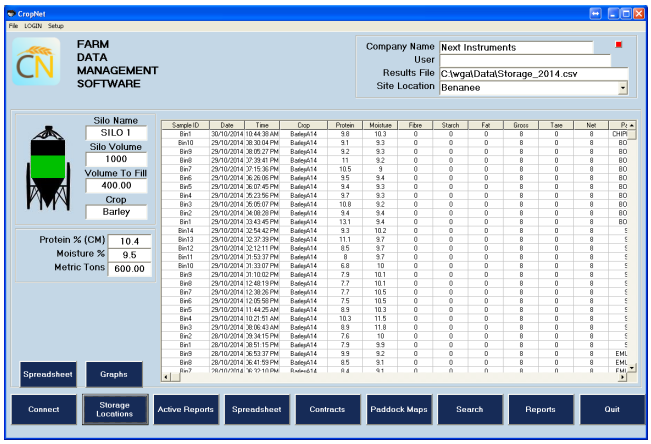
- *Built-in Touch Screen PC Operation*
- *Measures Protein and Moisture in Wheat, Barley, Oats, Peas, Beans, Sorghum and Rice.*
- *Measures Protein, Oil and Moisture in Canola, Soybean, Corn.*
- *Dial-up Variable Pathlength System: 8mm, 15mm, 24mm, 28mm.*
- *Suitable for use in a farm office or weighbridge shed*
- *CropNet Weighbridge software*
- *Internet software available*

The CropScan 3000X is suitable for use wherever whole grains and oil seeds are measured. The Cr3000X can run from a car battery and be used in the field as grains are harvested. It can be used in a silo or shed where grains are segregated and stored. It can be used in a grains processing plant such as an oil seed crusher, a flour mill or a food manufacturer.

CropNet...Manage Grain Quality and Quantity in the Cloud

CropNet is a system including grain analysers, computers and software that can generate comprehensive information on the quality of grains in storage both on farm and at the silo. The system consists of:

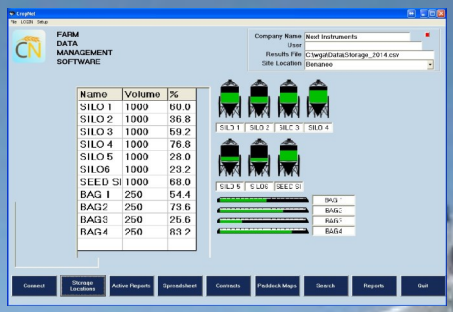
- CropScan 3000X Grain Analysis System
- CropScan Test Weight and Screenings System
- CropNet Grain Data Management Software



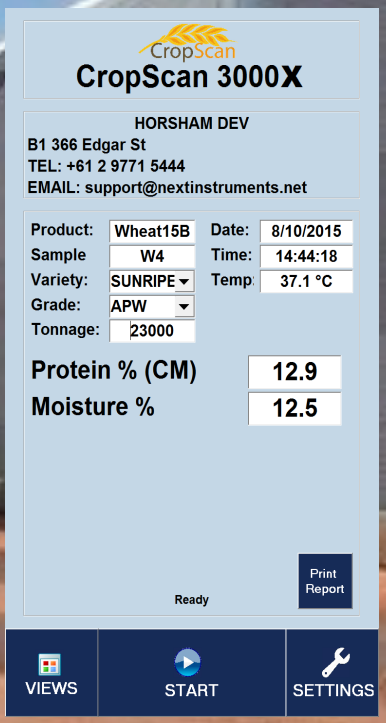
CropNet Grain Data Management Software reads the data from the CropScan 3000X, the tonnage from the weighbridge and combines the data into a spreadsheet. The data is sent to the Cloud where Reports, Tables and Graphs can be retrieved and displayed on the CropNet Software, printed or emailed.

CropNet Grain Data Management Software allows farmers to be "Price Makers not Price Takers". CropNet provides all the tools a farmer needs to properly know how much grain is stored where and what is its value.

CropNet sets up a Virtual Farm system where each silo, shed, bunker or grain bag is displayed. As grain is stored into a storage system, the running average for Protein, Moisture, Oil and Starch are displayed in real-time along with the tonnage. As grain is shipped out or transferred the running averages are updated and the tonnage corrected,.



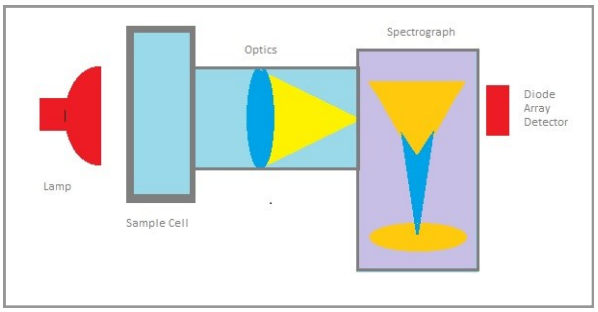
Data fields for Variety, Grade, Farm ID, Paddock ID, Truck ID, Date and Time are available as pulled down menus. Simply record all the data required and reports can be generated based on each field. For example, recall all loads shipped from Silo 1 to customer XYZ on a certain date.



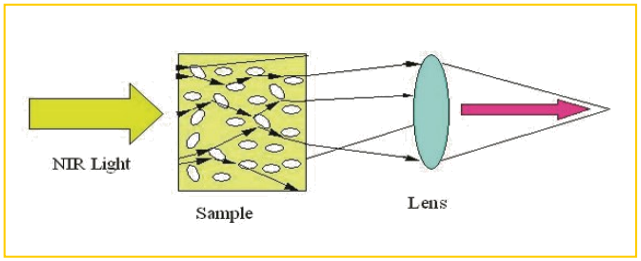
Technical Specifications and Calibrations

CropScan Near Infrared Transmission Technology:

Light from the lamp, passes through a sample of grains or oil seeds. The light bounces off the surfaces of the grains or oil seeds and propagates through the sample until it reaches the other side. The emerging light is focused into the slit of a flat field spectrograph that separates the light into its individual frequencies, across the wavelength range from 720-1100nm.



The separated light is then directed onto a silicon photo diode array detector. This array detector measures the intensity of the light at each frequency to produce what is called the NIT spectrum of the sample.



Within this region of the electromagnetic spectrum, N-H (protein), C-H (fats and oils) and O-H (water) and C-O-H (carbohydrates) absorb NIR light at specific frequencies. The NIT spectrum contains information about the concentration of these components. Calibration models, stored in the CropScan's computer, converts this information to % Protein, % Moisture, % Oil and % Starch and displays the results on the screen.

Next Instruments has developed a range of calibrations for grains and oil seeds.
The following table shows the matrix of products vs constituents.

Product	Constituent
Hard Wheat	Protein, Moisture
Hard Red Winter Wheat	Protein, Moisture
Hard Red Spring Wheat	Protein, Moisture
Soft Wheat	Protein, Moisture
Soft Red Winter Wheat	Protein, Moisture
Soft Red Winter Wheat	Protein, Moisture
Durum Wheat	Protein, Moisture
Malt Barley	Protein, Moisture, Colour
Feed Barley	Protein, Moisture
Oats	Protein, Moisture
Sorghum	Protein, Moisture
Triticale	Protein, Moisture
Corn (Maize)	Protein, Moisture, Oil, Starch
Soybean	Protein, Moisture, Oil, Fiber
Canola	Protein, Moisture, Oil
Rice	Protein, Moisture, Amylose
Field Peas, Chick Peas	Protein, Moisture
Faba Beans	Protein, Moisture
Lupins	Protein, Moisture
Lentils	Protein, Moisture
Mung Beans	Protein, Moisture

Specification	CropScan 3000X
Wavelength Range	720-1100nm
Optical Detector	Silicon Diode Array
Lamp	Halogen 12VDC, 10W
Scan Rate	2-4 sec per scan
Sample Pathlength: Automatic	8, 16, 24 and 30mm
Display:	Touch Screen PC
Power:	19VDC using 110 –240VAC
Operating Temp Range:	5-45^{0}C, 41-113^{0}F,
Dimensions (cm), Weight (Kg)	34 W x 33 D x 29 H 10Kg

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