

CORONA - The Compact Sensor Unit Specially Designed For Feed Industry



At line or Laboratory Measurements of :

- Moisture
- Protein
- Total Volatile Nitrogen
- Fat
- Fibre
- KOH Digest
- Pepsin Digest
- Peroxide Value
- Xanthophyl
- Starch
- Glucosinolates
- Tannin
- Hull
- Ash
- Minerals



Product information



We make it visible.

CORONA - Specially Des

CORONA

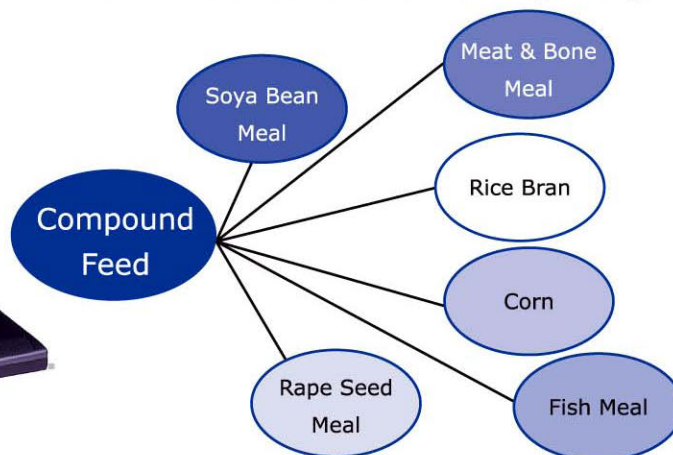
A versatile compact sensor unit specially designed for the accurate measurement of the Nutrition and Energy Values for the raw materials used in the least cost formulation for the production of different types of compound feed and concentrate in the feed industry.

The real time simultaneous determinations of the constituent of interest for the incoming raw materials provide the feed mill for the decision of premium purchase price and to enable the feed mill to segregate the in-coming raw materials into the relevant silos for storage.

The feed industry can now replace their time consuming conventional test methods and eliminate human error by using CORONA to guarantee excellent accuracy and repeatability for simultaneous determinations of Moisture, Protein, Total Volatile Nitrogen, Fat, Fibre, KOH Digest, Pepsin Digest, Peroxide Value, Xanthophyl, Starch, Glucosindates, Tannin, Hull, Minerals Content and Ash content for the in-coming raw materials and the finished feed products.

The total elimination of moving mechanical components offers a very high degree of reliability and permanent correctness of the spectral wavelength. Hence, results in calibration transfer among the CORONA FAMILY is so simple on a **"Plug and Play"** basis.

CORONA can be used for a wide variety of measuring tasks and is poised to tackle new measuring concepts because it offers specific measuring geometry and the option of parallel detection, in the UV, the visible and the Near Infrared Wavelength Range.



Software

CORONA is integrated with microprocessors to enable simple and automated operation. It also offers full networking facilities for easy integration into modern Laboratory Information Management Systems (LIMS)

CORA

The Applications Software developed by Zeiss, for the intelligent multi-functionality check as well as the control of Corona. Allows the simple and easy collection of the spectral data, on-line and off-line prediction of measurement results. The software is supported by Windows 98, 2000 and XP.

Aspect Plus

The spectrum software developed by Zeiss, provide the extensive mathematical functions for spectral analysis. The software is supported by Windows 3.11, 95, NT 2000 and XP.

Functional libraries under LabView and C/C++

The driver library used for spectral range detection and parameter administration.

Grams 32 / Unscrambler

The flexible and powerful software used for chemometric routines for the creation of calibration models.



Designed For Feed Industry

Benefits

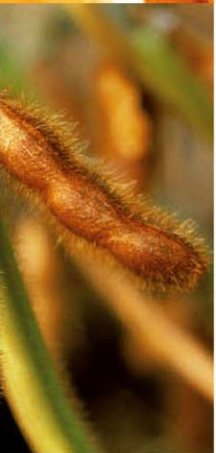
- Permits direct, safe, non-contact and non-destructive sample measurement. Operators no longer need to grind and prepare samples.
- Allows simultaneous multi-component analysis in less than 1 (one) minute.
- Provides fast, precise and cost-saving analysis for quality control tasks in the feed industry.
- Offers "state-of-the-art" diode array technology and the "Unique Zeiss Polychromator" design. Hence, CORONA measurement is not sensitive to colour, seasonal composition and particle size changes as well as unaffected by ambient influences such as ambient lighting, temperature and humidity.
- Provides wide wavelength range, with detection possible in milliseconds. Greater speed of measurement means more representative measuring of the sample and improved accuracy.
- Robust construction offers a very high degree of reliability and permanent correctness of the spectral wavelength by eliminating moving mechanical components. Hence, CORONA is service-free and calibration transfer among the CORONA FAMILY is so simple on a "**Plug and Play**" basis.
- CORONA is configured for UV / VIS / NIR measurements as well as for reflection and transmission.
- Comprehensive software package for simple automated operation with full networking facilities for easy integration into modern Laboratory Information Management Systems (LIMS)

Applications

At Line or Laboratory Measurements of : Moisture, Protein, Total Volatile Nitrogen, Fat, Fibre, KOH Digest, Pepsin Digest, Peroxide Value, Xanthophyl, Starch, Glucosinolates, Tannin, Ash, Minerals Content and Hull content for the in-coming raw materials, feed concentrate and compound feed for animals.

The feed industry application areas include:

- **In-coming Raw Materials:** Soya Bean, Soybean Meal, Meat & Bone Meal, Pollard, Rice Bran, Leaf Meal, Fish Meal, Corn, Copra Meal, Rice Bran Pellet, Peanut Meal, Canola Meal, Rape Seed Meal, Sorghum, Skim Milk, Speccillac, Corn Gluten Meal, Alfalfa, Barley, Wheat, Tapioca, Dry Shrimp Shell and Palm Kernel Meal, etc.
- **Finished Feed Products:** Different types of Feed Concentrate and Compound Feed for animals.



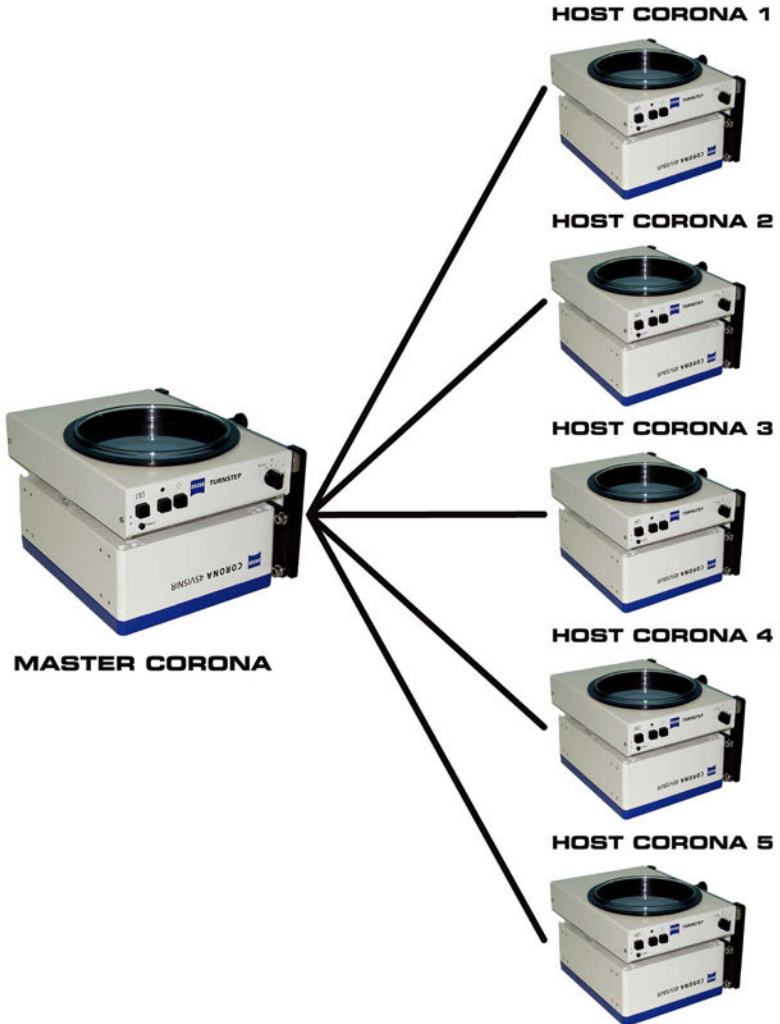
The List of Applications for Feed Industry

FINISHED PRODUCT and RAW MATERIAL	Composition																
	MC	PROT	FAT	FIBER	ASH	KOH DIGEST	Na	Ca	P.O.V.	P	PEPSIN DIGEST	HULL	XANTH OPHYL	STARCH	GLUCOSI NOLATES	TANNIN	TVN
Compound Feed	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓		✓		✓
Feed Concentrate	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓		✓		✓
Soya Bean	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		✓		✓		✓
Soybean Meal	✓	✓	✓	✓	✓	✓											
Meat & Bone Meal	✓	✓	✓	✓	✓		✓	✓		✓	✓						✓
Pollard	✓	✓	✓	✓	✓												
Rice Bran	✓	✓	✓	✓	✓				✓	✓		✓					
Leaf Meal	✓	✓	✓	✓	✓								✓				
Fish Meal	✓	✓	✓	✓	✓		✓	✓	✓		✓						✓
Corn	✓	✓	✓	✓	✓								✓				
Copra Meal	✓	✓	✓	✓	✓				✓	✓							
Rice Bran Pellet	✓	✓	✓	✓	✓				✓	✓		✓					
Peanut Meal	✓	✓	✓	✓	✓	✓						✓					
Canola Meal	✓	✓	✓	✓	✓	✓									✓		
Rape Seed Meal	✓	✓	✓	✓	✓	✓									✓		
Sorghum	✓	✓	✓	✓	✓									✓			✓
Skin Milk	✓	✓	✓	✓	✓		✓	✓		✓							
Specicilac	✓	✓	✓	✓	✓												
Corn Gluten Meal	✓	✓	✓	✓	✓	✓											
Alfalfa	✓	✓	✓	✓	✓								✓				
Barley	✓	✓	✓	✓	✓									✓			
Wheat	✓	✓	✓	✓	✓												
Tapioca	✓	✓	✓	✓	✓									✓			
Dry Shrimp Shell	✓	✓	✓	✓	✓		✓	✓									
Palm Kernel Meal	✓	✓	✓	✓	✓				✓								
Meats	✓	✓	✓	✓	✓												✓
Sausages	✓	✓	✓	✓	✓												✓



CALIBRATION TRANSFER ——— “Plug and Play”

The “State-Of-The-Art” diode array technology and the “Unique Zeiss Polychromator” design offers a very high degree of reliability and permanent correctness of the spectral wavelength by eliminating moving mechanical components and the powerful applications software enable the calibration transfer among the CORONA FAMILY is so simple on a “Plug and Play” basis.



CORONA - Technical Data

Mechanical Specifications	* optional item, not included in standard delivery
Range of operating temperatures	0°C + 40°C
Storage temperatures	- 10°C+ 65°C
Power consumption	< 30 VA
Power supply	12V,2.2A
Spectrometer-PC communication interface	RS 422, RS 485*, RS 232*, RS 422 - fibre link*
Spectrometer-to-PC distance	< 10 m (RS 422), < 80 m (RS 232 / RS 485) < 2000 m (RS 422 fibre link)
Digital inputs/outputs	4 inputs (0 ... 24 V external voltage) 4 outputs (0 ... 24 V external voltage)
Dimensions (W x H x D) in mm	About 324 x 168 x 246
Weight	About 7 kg
Protection grade	IP 65 (NEMA 4)
Optical Specifications	** depending on the type of CORONA
Spectrometer	Single beam diode array
Polychromator	MMS NIR 1.7
Sensor array	InGaAs array, 1-stage peltier cooling
Number of diodes	128 /256**
Wavelength range	950 ... 1700 nm
Spectral resolution	6/ 3** nm/diode (18/ 12**) nm/Rayleigh)
Wavelength accuracy	< 0.6 nm
Amplitude resolution	15 bits
Light source	Halogen lamp 5/10 V, 8/ 18 W, stabilized**
Lifetime of light source	About 3000 h
Measuring geometry	0° / 45° circular-shaped
Working distance (path height)	About 13 mm
Measuring spot	About 15 mm
Max. measuring rate	100 measurements/second (with RS 422 interface) 80 measurements / second (with RS 485 interface) 5 measurements/second (with RS 232 interface)
100% calibration	To external white standard
Sensor Specifications	
Reflectance range	0.2% ... 100% R
Reflection accuracy	< 0.2%
Reproducibility	30 measurements at two-second intervals. on white
at 0.1 s. measuring time	< 0.0003 AU ms
at 1 s. measuring time	< 0.0002 AU ms
Inter- instrument agreement	< 10 mAU differential between different sensors
Stray light	< 0.1% R (measurement with H2O on 1.45 µm water band)
Drift	< 0.1 % R/h (after warm-up of > 30 minutes)

In line with our policy of continuous improvement, SCA Pacific Pte Ltd reserves the right to revise published specifications, technical information and details of the products without prior notice.

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