

CHOPIN

TECHNOLOGIES



METHODS AND EQUIPEMENT
FOR GRAIN QUALITY CONTROL



 CATALOGUE 2011-2012

WWW.CHOPIN.FR

The Applications Laboratory

For more information,
labo.application@chopin.fr

advises you and adapts your devices to your specific needs.

- Development of analysis protocols and infrared calibrations, tailored to your process.
- Put at your disposal our equipped analysis laboratory, for your own studies and your researches.
- Specific training on our devices for a better understanding of analysis.

The SERDIA team

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serdia@chopin.fr.

listens to you and proposes you a customized silothermometry project.

- Diagnosis of your installation and your needs.
- Quoted study of your project.
- Installation of the system adapted to your silo and training of your operators.

Le service après-vente

For more information,
service@chopin.fr

helps you daily to guarantee an optimal use of your device.

- Operators practical training to guarantee perfect handling of your device.
- Device maintenance to secure the best conditions of use:
 - preventive maintenance contracts,
 - follow-up visits,
- Device repair, on-site or in our workshop, in the respect of the timing given.

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Grain storage temperature monitoring

Ensure the good preservation of your grain by controlling moisture and temperature in an optimal way.

SERDIA Silo-thermometry

Fixed probes

The probes enable a continued follow-up of the grain temperature inside the silo.

Advantages

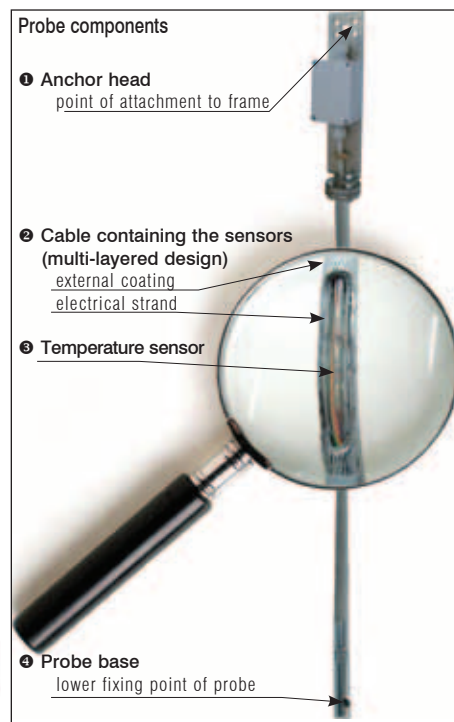
- **Measures display :** Identification of the critical areas requiring temperature control determines the distribution of the probes.
- **Cables strength :**
 - Coaxial technology cables for very long life.
 - Complying UL 94V2 standard for fire resistance.
- **Reduced traction forces :**
 - Small cables diameter do not strain the infrastructures.
 - May be fixed to any types of structure*.
- **Accuracy and reliability :** High-impedance thermistors which are more accurate and reliable than low-impedance sensors.
- **Easy maintenance :** The electrical elements slide freely within the cable which allows the sensors to be changed without removing the probe, even if the silo compartment is full of grain.

*Type of anchor

A type : for wooden framed silos



D type : for metallic and concrete silos



Temperature monitoring systems

CHOPIN Technologies supplies 2 types of temperature monitoring systems, STAM and Silostar. They are mutually compatible, allowing users to start with a STAM and then upgrade to a Silostar, which offers complete temperature monitoring:

- readings,
- automatic alarms,
- ventilation control.



SERDIA SILOSTAR®
PC-operated monitoring system



SERDIA STAM
Semi-automatic control system

	SERDIA SILOSTAR® PC-operated monitoring system	SERDIA STAM Semi-automatic control system
Temperature monitoring :		
• Probe scanning	automatic	automatic
• Temperature display	per silo, per cellule, per probe	per probe
• External temperature probe	yes	no
Specifications:		
• Measurement range	from - 15 to + 110 °C	from 0 to 60 °C
• Number of sensors	max. 255 probes of 16 sensors	max. 96 probes of 12 sensors
• Display	on LCD PC screen	on cabinet
• Remote maintenance	optional	
Alarm management specific to each probe	yes	no
Detection of the filling level of each compartment	yes	no
Security :	- alarm & ventilation management system - temperatures record	

Communications systems

Guarantee the information exchange between the temperature probes and the readers via the communications systems.

Choose the communication system that you need: wired or wireless.

The SERDIA wired system

It consists of the following components:

- connecting box,
- DLP cabinet,
- SERBUS interface board,
- electrical cables for interconnection of components.

The wireless system : SERDIA WiTEM®

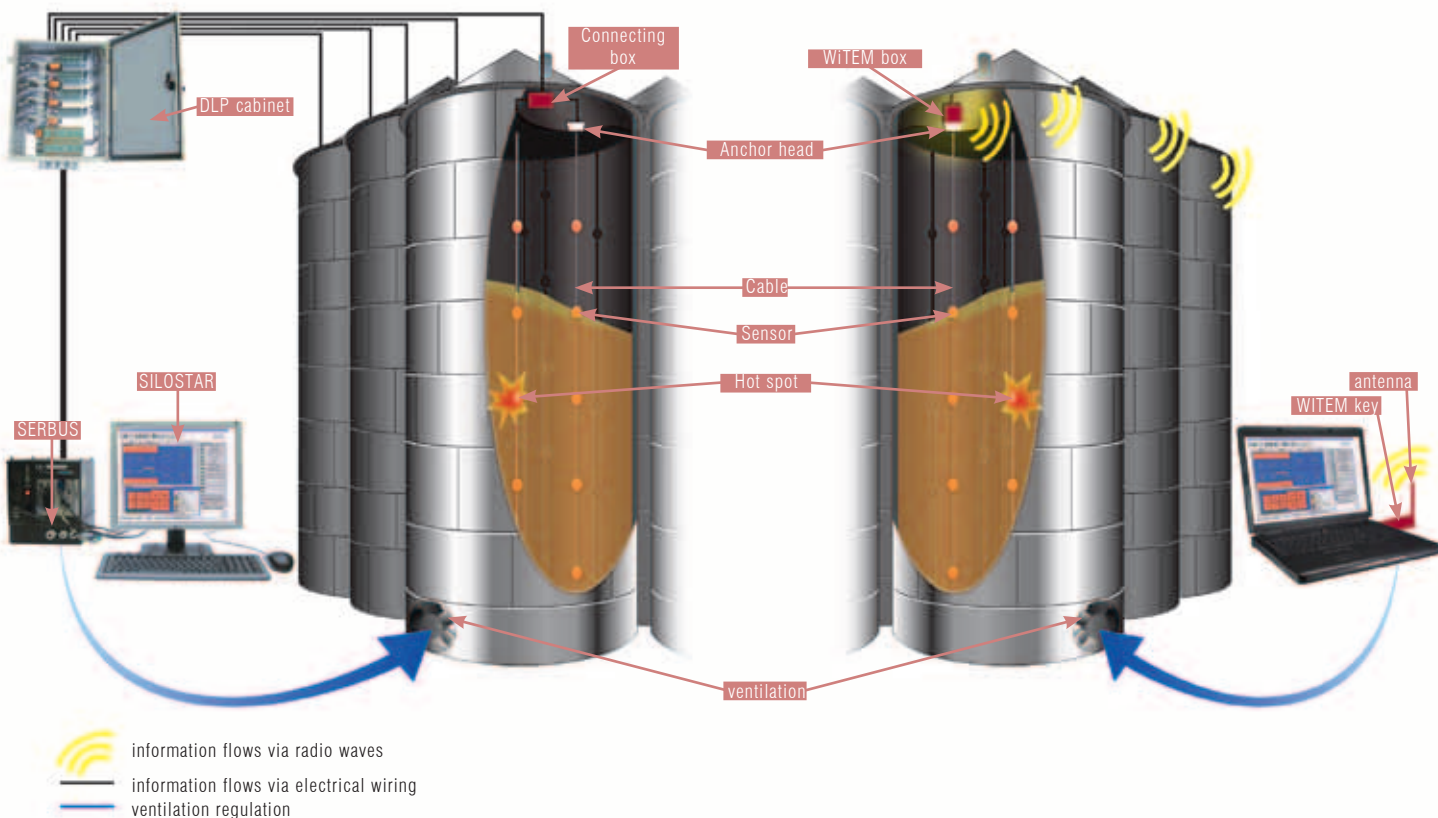
The WiTEM (Wireless Intelligence Temperature Monitoring) system is exclusively composed of radio transmitters/receivers for each probe and the reader.

WiTEM advantages

- **Adaptability :** Whatever the configuration of the site (concrete, steel, flat, etc.), the system guarantees completely reliable communications.
- **Reliability :** Removing cables and electrical switchboards eliminates 100% of breakdowns due to shortcircuits, rodents and lightning.
- **Maximum security :** A probe out of order does not prevent the other probes from working.
- **Simplicity and versatility :** It is extremely simple to add a WiTEM system to existing installations for extension or renovation purposes. This installation can be made on several steps (according to available budget).

Wired system flow chart

Witem wireless system flow chart

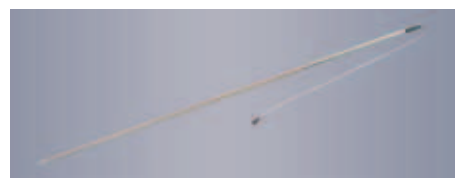


All CHOPIN Technologies equipment complies new ATEX standards requirements. INERIS 02ATEX0091 X homologation

▶▶▶ Mobile temperature control

Mobile probes for mobile readers

- Avoid the deterioration of your stored grains.
- Avoid the risks.



	Industrial model	Farmer model
Temperature reading	from 0 to +60°C on all temperature readers (portable and fixed)*	
Material	stainless steel 316 (or PVC construction according to intensity of use and height below ceilings)	
Length	from 2 to 6 m	2 m
Diameter	14 mm	14 mm
No. of points measured	1 to 3 (better repeatability)	1
Advantages	ergonomically designed for easy penetration into grain	Economically priced for small-scale activities

* STAM reading system (see page 4)

Mobile readers

Check the temperature of stored grains at a glance.



TR52 model

Displays 2 measurement points per probe.

AG 8200 model

Displays up to 7 measurement points per probe.



Advantages

- **Simplicity to use :** Clear digital display. Handy-made.
- **Robustness :** ABS anti-shock case.
- **Versatility :** Can be used everywhere thanks to the large measurement range from 0 to 60°C (+/-0.2°C).

Ordering information

Code	Article	Code	Article
08302370	Mobile probe - industrial model	08301500	TR 52 mobile reader
08302357	Mobile probe - agricultural model	08300001	AG 8200 mobile reader

Obtain a representative sample, which is suitable to carry out a good analysis, thanks to the probes and the dividers.

▶▶▶ Sampling

Automatic probes Pick-Up®

- Control the quality of your grains at reception.
- Check that your grains match the specifications.

Thanks to these probes, the sampling is made in 3 phases :

1. Penetration of the probe to bottom of container.
2. Gravitational or suction sample-taking of grains.
3. Pneumatic transfer to the control area.

Pick-Up® 3000

Sample-taking system	suction
Speed of sampling	6s
Sampled products	all the types of grains + most of the pellets and flours
Can be integrated to GESTAR*	yes
Volume sampled (adjustable)	< 4L
Terms of use	-20°C to +50°C (until -40°C in option)
Electric motorisation	220VAC - 50Hz no maintenance
Grain pipe	food quality

* GESTAR automatic controls upon delivery (see page 15)



Avantages

- **Sturdiness :** Construction in tough, galvanised steel throughout.
- **Simplicity et rapidity :** Easy to use thanks to entirely automatic operation of the probe.
- **Representativity :** Sample taken on full volume of the grain contained in the truck.
- **Flexibility :** The operator can change to aspirating (Pick Up 3000) or gravitary probe (Pick Up 3000G) at any time.

Ordering information

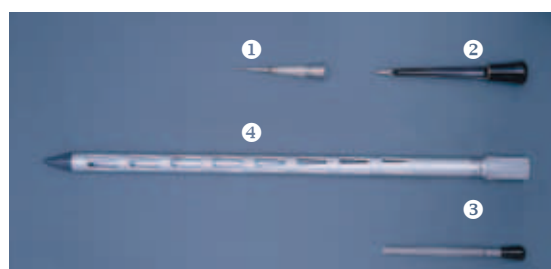
Code	Article
08300425	Pick-Up 3000 suction probe
08301866	Pick-Up 3000G gravitary probe

Options :

- gyroscopic arm
- automatic cyclofilter
- 350° rotation
- automatic recycling of sample taken
- automatic cleaning of grain circuit
- sampling coverage of 15m length

Manual probes

Chose your probe according to the product you want to sample.



Ordering information

	Code	Article	Length / Description
❶	130174	Conical grains probe	250 mm (stainless steel)
❷	130171	Cocoa and coffee beans probe	360 mm (steel)
❸	130179	Powder probe	300 mm - Ø14 mm (stainless steel)
❹	130180	RKS probe	1,5 m - Ø30 mm (aluminium)
❺	609205	RKS probe	2 m - Ø30 mm (aluminium)

Other models : motorised probes specifically designed for sampling powders, contact us.

Alpha online sample probe

Take representative samples of your raw materials (grains and powdery products) easily, to test the quality of your products.

This device takes samples on vertical ducts to test the quality of raw materials and end products.



Advantages

- **Simplicity et rapidity :** Simple installation and use thanks to the sampling automation. Reduced maintenance.
- **Sturdiness :** 316TI stainless steel construction.
- **Representativity :** Unpredictable taking of the sample.
- **Flexibility :** Programmable sampling duration and frequency.
- **Economic solution.**

Ordering information

Code	Article
603447	Alpha with case
603488	Alpha without case

- Options :**
- ATEX 20 EXII1DCC sampling capacity
 - pneumatic logic case

Sample division

Dividers

Obtain two samples which are perfectly homogeneous with the sample taken.



	Boerner conical divider	Riffle divider	VS Riffle divider
Advantages	- high quality of the sample division - ideal for laboratories	- meets the standards prescribed by the international Association for Seed Tests - good homogenisation : chute height 0.23 m	- economic solution - idéal for sampling upon delivery
Type of products	grains and granulated products	seeds	grains and granulated products
Material	mainly copper	stainless steel body	stainless steel body
Number of channels	36	14	18
Size of channels		16 mm wide	12,5 mm wide
Maximum volume	2,5 litres	3 litres	1,5 litres
Delivered with		- 4 steel 1,5L tanks - hopper separate from base	- 3 tinplate 1,5L tanks - hopper separate from base

Ordering information

Code	Article
130083	Boerner conical divider
616066	Base extension 30 cm height + upper hopper extension 15L (Boerner)

Code	Article
130080	Riffle divider
614223	VS Riffle divider

Value, classify, secure your grains upon delivery, by determining the level of impurities, specific weight, proteins and moisture contents, ect. of your samples.

▶▶▶ Impurities

Quatuor® II Automatic Dockage Tester

Adopt THE unique worldwide solution to get automatic determination of the level of impurities in grains (light impurities, broken grains, total impurities, good grains) upon delivery.

This device, equipped with 2 rotative sieves and air flow, performs 3 operations:

- cleans (removes impurities),
- sorts (granulometric classification),
- weighs and calculates the % of the various fractions obtained.

Advantages

- **Reliability :** No influence of the operator on the results.
- **Simplicity and rapidity :** 1min20sec/sample. Results display at the end of the cycle for printing or transfer to computer.
- **Versatility :** Adapted to all types of grains (wheat, barley, colza, sunflower, corn).
- **User-friendly :**
 - Silent.
 - Simplified change of sieves.
 - Large selection of sieves.
 - Simple calibration of integrated scales.
- **Evolution capacities :** Can be integrated into GESTAR (see page 15).



Ordering information

Code	Article
06200294	Quatuor II
03500036	Pack of 8 extra sieves
03700107	Input keyboard

- Options :**
- Software for collection of results on PC
 - Printer

▶▶▶ Level of impurities (continuation)

NSP cleaner

Clean your samples, weigh and measure the level of impurities.

This device uses the horizontal sieving principle. It requires a scale (not included) to calculate impurity rate.

Advantages

- **Versatility :** Can work with all types of grains thanks to a large selection of sieves.
- **Rapidity :** Separation of 1 litre of grain into 4 parts, in around 45 sec.
- **Sturdiness :** Developed for an intensive use (silo).



Features

Power supply : 220 V - 380 W
 Net weight : 58 kg
 Gross weight : 105 kg
 Dimensions (LxDxH) : 47 x 98 x 90 cm
 Packaging (LxDxH) : 57 x 122 x 99 cm

Ordering information

Code	Article
612423	NSP with 3 sieves
613361	Extra sieves
0370037	Pack of 11 extra sieves

Options :

- version with 3 different sieves
- scales

Sieves

- Control the level of impurities upon grains reception.
- Detect insects.
- Avoid returns of your goods for non compliance by controlling your cereals, oil- and protein-yielding seeds before delivery.

Stainless steel sieve (Ø 200mm)

Certified sieve complying all requirements of ISO 5223 standard of February 1996 regarding the «control sieves for cereals».

Each numbered sieve bears an identification tag providing nominal opening and undergoes inspection by SGS. A stamp is affixed on the label of the sieve body and on the perforated plate.

Ordering information

Code	Holes (mm)	Product
616045	1,00 x 20	Soft wheat, hard wheat, barley, rye, maize, sorghum
616046	1,70 x 20	Soft wheat
616047	1,80 x 20	Rye
616048	1,90 x 20	Hard wheat
616049	2,00 x 20	Soft wheat
616050	2,20 x 20	Barley
616051	2,50 x 20	Barley
616052	2,80 x 20	Barley, wheat
616053	3,55 x 20	Soft wheat, hard wheat, barley, rye
616054	Ø4,50	Maize
Code	Article	
130199	Box (base + cover)	



Ordering information

Code	Article
130210	Weevil sieve



Wooden sieve for insect detection (Ø30cm)

Equipped with a collection tray, this sieve is fitted with stainless steel mesh (1.80 mm opening)

▶▶▶ Grains counting



Numigral

- Measure the weight of 1000 grains.
- Qualify your seeds.
- Estimate the number of grains to be sowed to obtain the good density of sowing.
- Estimate the agronomic yield, the flour and middlings extraction and the brewing yield.

The Numigral complies AFNOR NF V03-702 and ISO 720 standards for the determination of the mass of 1000 grains.

Can count all kind of items between 1 and 15 mm (grains, seeds, etc.) thanks to the single bowl and the adjustment screw which eliminates over-sized products from the count and prevents several items passing in front of the sensor together. Pre-selection of number of elements to be counted and automatic stop of bowl vibration when the selected number is reached.

Ordering information

Code	Article
471103	Numigral

▶▶▶ Specific Weight

Nilema-litre® et Nilematic®

- Measure grains density
- Estimate the grain milling yield by the reference method or thanks to the unique automatic worldwide solution.

These devices comply AFNOR NF V03-719 (only the Nilema-litre) and ISO 7971/2 standards for the density determination, called the hectolitre mass.



Nilema-litre®
Reference method



Nilematic®
Automatic patented technology

Conditions of use	- equipped with filling hopper designed to ensure regular packing down of grain in the litre container - requires an approved scale (not supplied)	Conditions of use	- pour a sample into the hopper - the result is displayed in just 10 seconds
Versatility	cereals, oil and protein-yielding seeds and other granulated products		
Can be integrated into GESTAR*	no	yes	

* GESTAR automatic controls upon delivery (see page 15)

Features

Nilema-litre

Litre container and hopper made of chromed brass

Nilematic

Power supply : mains and 12V adaptor

Net weight : 7,8 kg

Dimensions (LxDxH) : 24 x 33 x 47 cm

Outputs : RS 232 series, parallel for printer

Ordering information

Code	Article
900113	Nilema litre without scale
06200442	Nilematic (includes personalisation software and PC connection cable)

Options Nilematic :

- Nilematic / NIR combination
- ticket printer

Moisture

Wile portable moisture meters

- Determine when to harvest, deliver, dry or ventilate.
- Evaluate future fodder quality.
- Prevent fire risks.



Wile 55



Wile 65



Wile 26

	Wile 55	Wile 65	Wile 26
Product analysed swathes	cereal grains, oil and protein-yielding grains (soft wheat, barley, winter barley, colza, sunflower, maize, moist maize, hard wheat, oats, rye, peas, soya, flax, rice, sorghum, ray-grass)		straw and fodder in sheaves or swathes
Advantages	- automatic grain device temperature compensator - resistant to vibrations, no moving mechanical parts - 16 grains calibrations included	- displays name of grain and menu	- sheaf density compensator adjustable from 80 to 250 kg/m ³
Moisture	from 5 to 40% - +/- 0,5%	from 5 to 40% - +/- 0,5%	from 13 to 83% - +/- 0,5%
Temperature	non measured	from 0 to 80°C - +/- 0,2% (by external probe)	from 0 to 80°C - +/- 0,2% (by external probe)

Advantages

- **Simplicity :** Direct reading on digital screen easy to carry.
- **Sécurité :** Can be calibrated with an oven or an approved moisture meter.

Ordering information

Code	Article
616055	Wile 55 (with a transportation bag and a 9-volt battery)
03800003	Wile 65 équipé with a 1 meter external temperature probe W651 (with a transportation bag and a 9-volt battery)

Code	Article
616342	Wile 26 (with a transportation bag and a 9-volt battery)
616343	Long probe. 50 cm W 251
616344	Long probe. 90 cm W 252
616345	Bowl probe W 253
03800005	1 meter external temperature probe W651

Aqua-TR and Agri-TR approved moisture meters

- Secure your commercial transactions.
- Determine whether to harvest, to dry or to ventilate your grain.
- Control storage conditions.
- Optimise the maize drying.



These moisture meters use the capacitive technology to determine water content. The EU-certified specific weight (SW) is measured after gravitational auto-levelling (patented system) and automatic temperature compensation.

Simultaneous and fast measurement of:

- moisture,
- specific weight (SW),
- temperature.



	Aqua-TR	Agri-TR
Test time	20 seconds	35 seconds
Number of calibrations (type of grains)	64	8
LNE* approved moisture content	for commercial transactions	
Automatic triggering	yes	no
Can be integrated into GESTAR**	yes	no
Can be coupled with NIR analysers	yes	no
Traceability (Aqua-Pro software)	memorisation of 1000 results and no data collection on Excel	
Connection	printer, computer or modem	printer
Mobility	can be powered from a 12V cigarette lighter socket	

* LNE : Laboratoire National d'Essai (French National testing Laboratory)

** GESTAR automatic controls upon delivery (see page 15)

Advantages

- **Automatic**
- **Reliability and accuracy :** Large volume of measured grains (650 ml).
- **Evaluation of the milling yield :** Certified specific weight (SW)
- **Calibrations approved up to 45% moisture (maize).**

Features

Usage temperature : from 2 to 45°C
 Power supply : 110/220 V - 50/60 Hz
 Power : 70 W
 Net weight : 9,6 kg
 Gross weight : 14 kg
 Dimensions (LxDxH) : 24 x 33 x 47 cm
 RS and parallel output (Aqua-TR)

Ordering information

Code	Article
06200551	Aqua-TR
06201388	Agri-TR
03700389	Printer

Options :

- 12V cigarette lighter connection cable
- kit for combination Aqua-TR with an infrared analyser (NIR)
- Aqua-Pro software for Agri-TR

▶▶▶ Infrared analysis

Infraneo®

- Secure your business deals thanks to the best tool, the Infraneo.
- Control the grains quality:
 - Proteins,
 - Moisture,
 - Specific Weight, etc.



This near infrared analyser has been specifically designed for the control of grains upon reception.

Advantages

- **Versatility :** Analyses major parameters (protein, oil and moisture content, etc.) on all types of whole grains (wheat, barley, colza, maize, soya, rye...).
- **Reliability :** Robustness of the device and consistency of the results thanks to the SAM⁽¹⁾ system which automatically limits the adjustment of bias of the monochromator.
- **Rapidity :** Measure takes less than 60 seconds, regardless of the number of parameters measured. Measure takes 45 seconds in 10 sub samples (wheat).
- **Accuracy :** Correctness and homogeneity of the results thanks to an excellent transferability of the calibrations between Infraneo. These calibration are maintained and updated to guarantee accurate and reliable results.
- **User-friendly :** Selecting the type of grain to be tested via a dropdown menu. Easy export and data management with excel.
- **Traceability :** Over 100,000 analyses stored. Research function in increasing / decreasing order allowing to find an analysis for a permanent follow-up.
- **Reduced maintenance :** Operator can change the lamp easily. Remote maintenance connexion from CHOPIN Technologies technicians enables to very quickly resolve problems on your device on your demand.
- **Evolution :** Development of new calibration independently or with the support of CHOPIN Technologies application laboratory.

* GESTAR automatic controls upon delivery (see page 15)



(1) SAM (Self Adjustment of Monochromator)

The device automatically monitors all elements each time it starts up and on a regular basis. The Infraneo is extremely stable and, if required, it can automatically readjust itself, unlike the other NIR analysers. In addition to lasting stability, it enables users to change the lamp with full safety.

(2) Moisture / SW Modules

The Infraneo can be combined with an Aqua-TR moisture meter in order to obtain approved moisture and SW at the same time. It can also measure SW thanks to a built-in module.



Features

- Windows XP® and touch screen 12'
- Output : Ethernet RJ45,4 USB2 connections
- Type of analyse : by transmission
- Spectral precision : 0,1 nm
- Grain quantity : from 50 mL to 1 litre without prior grinding or weighing
- Dust and moisture protection
- Power supply : 100/250 V - 50/60 Hz
- Net weight : 36 kg
- Dimensions (LxDxH) : 63 x 50 x 39,5 cm

Ordering information

Code	Article
06203251	Infraneo
06203310	Grain sliding cell

- Options :**
- Aqua-TR module
 - Integrated SW module
 - Printer
 - External keyboard and mouses
 - Uninterruptible power supply

Automatic controls upon grains delivery

4

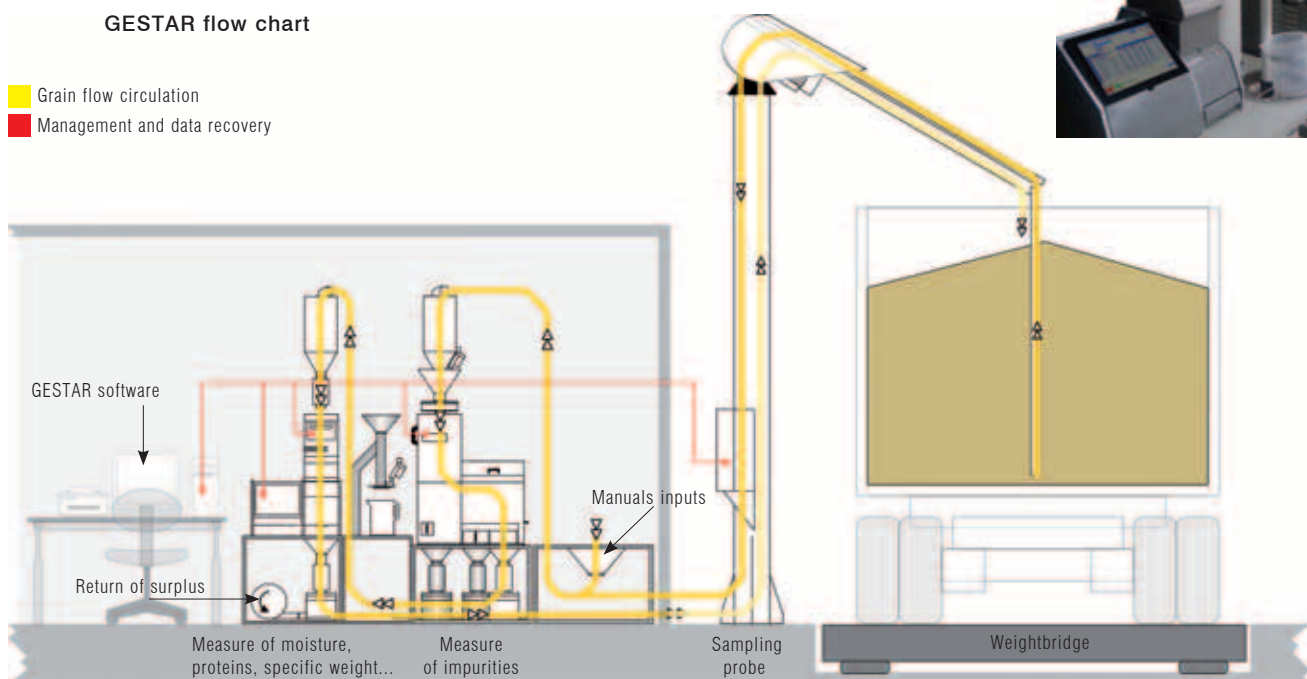
Get the level of proteins, moisture, specific weight, gluten, zeleny, impurities, etc. in one operation, on the same sample, without human intervention. Gather all this information on the same ticket, combined with the quantity delivered.

GESTAR® System

Adopt THE complete solution to control and secure receipt of grains.

GESTAR, includes:

- a sampling probe (Pick Up 3000 or other),
- one or more analysis equipment (Quatuor II, Aqua-TR, Infraneo),
- a computer,
- automatic items.



Advantages

- **Reliability and traceability :** The GESTAR software allows to select calibrations (to drive and to monitor all analysis) to collect and store automatically the results. Quality is improved by standardising controls.
- **Time savings :** Less labour needed, which reduces the influence of the operator on the results.
- **Simplicity and flexibility :** The GESTAR solution is customisable to your current installation and your needs. The computer interface is easy to use.

Features

- CHOPIN Technologies equipment which can be integrated into GESTAR:
- GESTAR software working on Microsoft Windows® XP
 - Pick-Up 3000 automatic probe (see page 7)
 - Quatuor II automatic determination of impurities level (see page 10)
 - Aqua-TR approved moisture and SW meter (see page 13)
 - Infraneo NIR analyser (see page 14)

Ordering information

Contact us for a personalised quotation of the GESTAR solution adapted to your installation.

CHOPIN technologies

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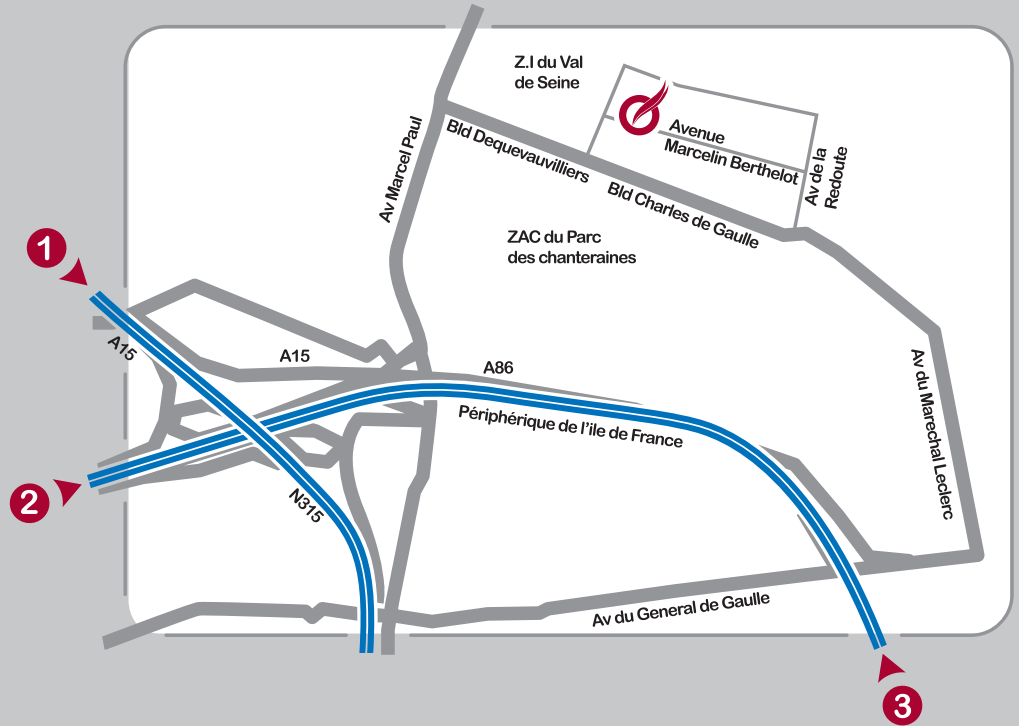
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