# Food Analyzers


mrc

## AKA-11, Automatic Kjeldahl Analyzer

AKA-11

AKA-11 Auto Kjeldahl analyzer is an automatic device integrating distillation and titration functions designed based on classic Kjeldahl nitrogen determination method.
It's equipped with the latest core control system, powerful automatic degree and high-quality components, can easily achieve automatic waste discharge and cleaning of boiling tubes and titration cups, control steam supply and have real-time detection of condensation temperature. High-accuracy charging pump and titration system ensure test results accuracy, and multiple fluid-level detection gives smooth test process.

**Titration precision as high as 1.0μL/step** AKA-11 Auto Kjeldahl analyzer has exclusive design i.e. linear motor micro-control titration system which ensures accurate results; the external use is easy for the observation of the whole titration process; the built-in high-sensibility color sensing unit ensures accurate final point determination; extremely high-precision plunger titration unit achieves unprecedented precision as high as 1.0μL/step.

**Brand new touch interaction system** The powerful calculation function based on ARM microprocessor unit can be operated directly through the touch screen; powerful detection function has all test steps under real-time monitoring with status displayed in figures; solution barrel level detection function and high-grade pump effectively ensure correct solution supply; samples can be detected and classified by the system, and traditional test methods & parameters are built in & can be freely used in the test process.

**Correct steam control** New material PTC constant-temperature heating modules are used in the heating unit of the steam generation system, and the use of metallic heater speeds up the fluid boiling, ensuring the generation of a great deal of steam in a short period; digital electronic temperature measurement and mechanical temperature measurement provides the heating unit with double protections; customized steam pressure regulating valve guarantees the steam generation system safety and ensures uniform steam output; and steam flow is also adjustable with software system.

### Characteristics:

- Automatic completion of distillation, titration, calculation, printing, waste discharge and cleaning.
- External titration cup design gives operator real-time control of the whole test process.
- Large LCD touch screen gives visual operation & abundant information, enabling user to have a good command of it.

**Scope of application** AKA-11 Auto Analyzer is widely used in food processing, feed production, tobacco, livestock, soil fertility, environmental monitoring, medicine, agriculture, scientific research, teaching, quality control & other fields for the test of nitrogen or protein content, can also be used for the test of ammonium, volatile fatty acid / alkali, & so on.

| Model | AKA-11 |
|---|---|
| Sample capacity | Solid≤5.00g/sample, liquid≤20mL/sample |
| Measuring range | 0.1mg N – 200mg N |
| Analysis time | 5 – 10 min/sample |
| Recovery | ≥ 99.5% |
| Burette volume | 1.0μl/step |
| Reproducibility | Average value relative error 0.5% |
| Storage capacity | 1000 pieces |
| Interface | USB or RS485 |
| Power supply / Power | 220V 50Hz / 2KW |
| Water consumption in the distillation process | 1.5L/min |
| Cooling water temperature | <20°C |
| Ambient temperature | 10°C – 28°C |

## DIST-984, Auto Distiller

DIST-984 Auto Distiller is designed to determine nitrogen content of samples in the globally accepted Kjeldahl nitrogen determination method. Fully intelligent software is able to complete sample distillation within minutes. The distillation and condensation automatic cleaning system further enhances measurement precision. It is widely used in food processing, feed production, tobacco, livestock, soil fertility, environmental monitoring, medicine, agriculture, scientific research, teaching, quality control.

DIST-984

**Characteristics:** Display: 5.1" LCD screen • Manual/automatic mode fee changeover • Automatic alkali liquid quantification and filling • Automatic boric solution quantification and filling • Automatic or manual filling mode is optional according to test need • Distillation time can be set freely, and automatic alarming upon completion • Automatic cleaning of control system and distiller, ensuring high measurement accuracy • Perfect safety protection system gives distiller and tubes measurement and protection against over-temperature and over-pressure • Intelligent cooling water control system achieves cooling water control and test.

| Model | DIST-984 |
|---|---|
| Measuring range | 0.1–200mgN (mg N) |
| Nitrogen recovery | ≥99.5% |
| Repeat accuracy | ±0.5%(CV) |
| Sample weight | Solid<6g, liquid<16ml |
| Distillation speed | < 5min/sample |
| Distillation period | Can be set freely (within 1 hour) |
| Cooling water consumption | 1.5 L/min |
| Power supply | 220V 50Hz |
| Power / Max. power | 2KW / 1300W |
| Volume | 400mm×361mm×746mm |


## GD-22, Graphite Digester

| Model | GD-22 |
|---|---|
| Temperature range | Room temperature ~450°C |
| Heating method | Infrared heating & high-purity graphite conduction |
| Temperature accuracy | ±1°C |
| Digestion tube capacity | 280ml |
| Processing capacity | 20pcs |
| Heat insulation | High-density aluminum silicate |
| Power supply | 220V 50Hz |
| Power | 3.6KW |
| Size | 534mm×453mm×218mm |

### Characteristics:

- Continuously adjustable furnace temp., constant temp. control & simple operation
- Smaller average temperature difference inside furnace, consistent sample digestion effect and high heat transfer efficiency.
- Its chamber is made of stainless steel, enjoying excellent corrosion resistance.
- The use of anti-corrosive parts enhances its service life.
- It enjoys multiple protections against over-voltage, over current, overheating, and so on.
- The sample is given uniform heating, to prevent heat loss to the maximum extent
- Superior heater ensures temperature uniformity among the digestion holes.
- Double-casing design offer double insulations i.e. air and aluminum silicate thermal insulating layers.

GD-22 Graphite Digester includes globally advanced technology, features quick digestion, high efficiency and easy for use, etc., is widely used in such fields as food, medicine, agriculture, forestry, environmental protection, chemical engineering, biochemistry, as well as universities, research departments and so on, for sample digestion prior to the chemical analysis of soil, feed, plants, seeds, minerals etc., suitable for matching DIST-984 analyzer.

### Optional accessories:

- WGCH-02 waste gas collection hood.
- Connect the digester to the waste discharger for the removal of acidic gases.

WGCH-02

### WGCH-02 characteristics:

- Full stainless steel casing.
- PTFE and FPM anti-corrosive materials are used for the connection parts, greatly increase its service life.
- U.S. Dupont FPM seal rings are used for sealing joints, offering high flexibility and corrosion resistance, excellent air-tightness, can minimize exhaust gas leakage.


## GD-42, Graphite Digester

GD-42 Graphite Digester adopts globally advanced high-temperature infrared radiation heating technology and microprocessor control platform, boasts accurate temperature control and quick temperature rise. GD-42 has two kinds of temperature rise mode: linear and curve temperature rise mode, & offers 20 digestion programs for control of temperature rise curves. MRC neutralization system S402 has many functions such as triple filtration, condensate recovery of exhaust gas, filtration and neutralization device. The product adopts high-quality Anticorrosive Pumps, low noise, strong suction, reduce exhaust emissions, eco-friendly.

### Characteristics:

- 20 positions, enhance working efficiency rapidly.
- Graphite block have longer life after special anti-oxidation processing and heating more uniform.
- Corrosion-resistant design
- It adopts advanced PID temperature control technology , high accuracy heating up to 400°C only cost 25minutes.
- Multi-protection , Over-current protection, high temperature warning, overload protection.
- It adopts 5.6" color screen, easy for use.
- It can pretreat for microwave digestion or removing acid after digestion.
- Standard configuration with waste gas collection hood.
- Use with WD03 exhaust hood and S402 neutralization system.
- Digestion tube (300ml) of the GD-42 can be compatible with other leading brand, it is more convenient to use.

| Model | GD-42 |
|---|---|
| Temperature range | Room temperature 5-450°C |
| Heating method | Infrared heating & high-purity graphite conduction |
| Heating insulation method | unique air duct insulation technology |
| Temperature accuracy | ±1°C (450°C) |
| Digestion tube capacity | 280ml |
| Capacity per batch | 20pcs/batch |
| Power supply | 220 VAC±10% 50HZ |
| Power | 3600W |
| Size | 474mmX509mmX636mm |
| Net weight | 25Kg |

## S402, Exhausting System

Waste gas treatment is important for environment.
Neutralization system has perfect effect of neutralization & absorption performance, can neutralize acid mist and reaction waste gas where from Kjeldahl or other experiments.
Adopt efficiency anticorrosion pump for absorption, unique & efficiency absorption device design.
It makes contact area expanded with gas/ liquid, perfectly neutralize acid gas, made operating environment friendly.

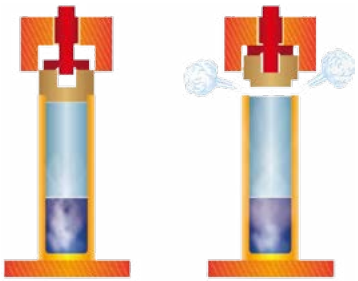
MDS-100A

MDS-100B

## MDS-100A/B, High Throughput Closed Microwaves, Digestion/Extraction Workstation

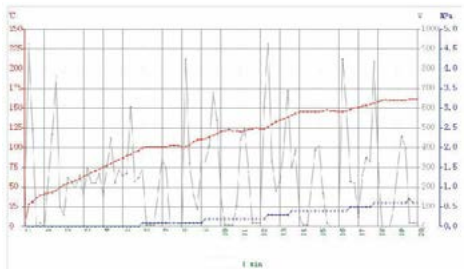
With more than 20 years experience in microwave chemistry instrument industry and the latest industrial technology, MDS-100A/B high throughput closed micro wave digestion/extraction workstation can be widely used in routine laboratories and also applied under extreme conditions. The highest level of security measures adopted such as the use of aerospace composite fiber vessel and safety bolt (pat ented), simple and smart operating software and the use of high-quality materials such as corrosion-resistant ultra-long life industrial chamber show that MRC is always striving for perfection and makes breakthrough in technology, process and materials. MDS-100A/B microwave digestion/extraction workstation, integrated with the latest industrial technology and materials set a new benchmark in the company, which together with MASTER series, forms the company's complete product line to meet the needs of various industries and strive to provide custom ers the safe, convenient, efficient, durable products and superior experience.

- The outer vessel of MDS exclusively made by ultrastrength aerospace composite fiber is invincible in anti-explosion, and its performance indicators such as corrosion resistance, high temperature/impact/pressure resistance are far better than that of the widely used modified PEEK engineering plastics vessel (this material is fusible at high temperature, fragile at high pressure and explosive by chemical corrosion) , fundamentally eliminating safety risks to operator in use.



- Quantified vertical blast/safety bolt design, ensures samples be closed completely & trigger a quantified pressure relief while over pressure; safety bolt (patent) unit, instead of safety membrane and other consumables, ensure the diges tion vessel be sealed completely under normal working conditions. And only when the pressure is large enough and may constitute a danger to the safety, the safety bolt will automatically blow out vertically & the cover auto-up to release the pressure, achieving quantified vertical blast pressure-relief to guarantee its well operation. Under normal operation, the safety bolt won't blow out & requires no replacement. In addition, it is easy for ventingto open the cover after completion of digestion.

- Automatic Frequency Control of Non-pulse Microwave Power ensures the accurate closed-loop control of the temperature and pressure, and also improves the efficiency of microwave transmitter of magnetron. 12 vessels per bath throughput capability, increase the efficiency of the pretreatment process in the lab.



- The industrial-leading pressure measuring technology by piezoelectric crystal and high-precision Pt sensor temperature measurement and control,through closed-loop control of micro wave power by inverter technique,ensure the accuracy of pressure and temperature monitoring and control. The application of patented piezoelectric crystal brings about complete isolation of samples from pressure measurement system in digestion process, thoroughly solving the prob lems of cross contamination of samples due to commonly used air pipe in market and of the limitation in digestion samples because of low-pressure proof of air pipe.

- The new digestion, changing its traditional bulky appearance, uses European industrial design, colorful and smart, that in line with the needs of modern laboratory building. It re-layouts its inter nal structure more scientifically that it reduces the volume of the machine while providing 42L industrial reactor chamber to ensure uniform heating of the microwave and convenient operation.

- The patented design that the whole set of digestion vessels in chamber always continuous rotates in one direction, breaks conventions of <360° back and forth rotation of the digestion unit, avoid ing uneven heating on vessels by microwave and reducing impact on turntable motor, extending service life.

- Sturdy & durable industrial-grade chamber design strengthen its impact resistance; Professional focused microwave design make microwave heating more efficient; Multi-layer chemical resistant coating greatly improves the service life and safety of the system; the popup cushioning explo sion-proof sliding chamber door builds a passive safety protection system, easing operation; double-locked self-checking system of the chamber door and the push-type open-door mecha nism at the top make the operation simple and easy; efficient exhaust system design achieves fast and safe air-cooled cooling (20 min cooling from 200°(to 60°C), improving operational efficiency.

**The Popup Cushioning Explosion Proof Sliding Chamber Door**

- MDS-100A/Bs' software & remote control system have many advantages: safety external PC control; friendly windows interface that is easy to be operated;display digestion temperature, pressure & changes of microwave transmit power in real time; directly display its working process; through computer's remote control station,do operations such as setting, running, change time and power etc; the software can save unlimited amount of digestion solution, making it convenient for users. The user-friendly software operation like a chemist, who help you complete various operations, providing customers with safe, scientific & convenient operation experience (color software and computer connection are for MDS-100A).

## Safety & Convenient In Operation High In Efficiency Durable In Use:

- Satisfy the requirements of different samples' digestion/extraction processing
- Up to 12 vessels high-throughput processing capacity
- Exclusive patented multifunctional safety bolt design, instead of explosion-proof membrane and other consumables
- Aerospace composite fiber outer vessel-the highest level of security measures
- Large-screen color softare interface,clear and direct-viewing in operation, bright in appearance and smart 1n performance
- Connected to and controlled by computer, achieving secure remote operation, and unlimited program storage database
- Small volume VS big chamber, which is advance in industrial design and provides perfect experience
- Free lifetime warranty to the core components-magnetron of the micro wave Digestion System.

## Application area:

Food and drug (milk and dairy products, health food), cosmetics, agricultural and sideline products, aquatic products, biological tissues, various types of feed, energy and petrochemical, geology and mineral resources, environmental resources (air, water, soil), metals, alloys, ceramics, RoH5, medicine, domestic wastes

## Ultrastrength frame closed reaction vessel:

| | |
|---|---|
| **Maximum Pressure** | 15MPa (2250psi) |
| **Maximum working pressure** | 4Mpa (600psi) |
| **Maximum sustained temperature** | 300°C |
| **Maximum working temperature** | 250°C |
| **Inner vessel volume** | 100ml |
| **Outer vessel material** | ultrastrength aerospace composite fiber |
| **Inner vessel material** | TFM (Modified PTFE) |
| **Maximum batch capacity** | 12 vessels |

| Model | MDS-100A | MDS-100B |
|---|---|---|
| **Power** | 220-240 VAC 50/60Hz 8A | |
| **Microwave frequency** | 2450MHz | |
| **Installed power** | 1800W | |
| **Maximum output power** | 1300W, non-pulse continuous automatic variable frequency control | |
| **Turntable design** | Load 12 it closed digestion vessels at same time (standard configuration is 10vessels) | |
| **Pressure measurement & control system** | Piezoelectric crystal pressure sensor, pressure control range :0-1OMPa ( 1500 psi), accuracy ± 0.01MPa | |
| **Temperature measurement & control system** | High-precision platinum resistor temperature sensor, temperature range :0-300°(, accuracy ±1°C | |
| **Outer vessel material** | Explosion-proof outer vessel made of aerospace composite fiber | |
| **Inner vessel material** | Modified TFM material | |
| **Software** | MDS-100A apply JSs software. 5 inch color screen display, USB connection, can save unlimited amount of digestion solution | Simplified MDS-100B apply JSb software. 5 inch screen display and up to 50 methods can be stored |
| **Chamber exhaust system** | High-power anticorrosion axial fan, exhaust speed: 3.1 m 3/min | |
| **Operating ambient temperature** | 0-40°C | |
| **Working environment humidity** | 15-80%RH | |
| **Whole physical size** | 450 x 600 x 620mm (W x D x H) | |
| **Net weight** | 42 KG | |

MDS-100G

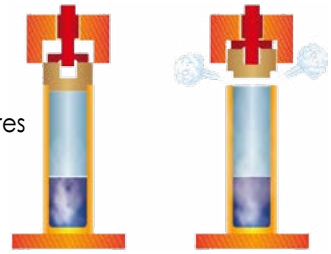
## MDS-100G, Closed Microwave Digestion/Extraction System

MDS-100G microwave digestion/extraction/synthesis system (nickname: SMART), a subversion of tradition, is a ma rket-oriented practica l compact microwave digester made by MRC with its over 20 years' experience; It highlig hts the company's three major ideas of product design and also meets users' needs in "safety' "durability" and "convenience of operation."

• The outer vessel of SMART exclusively made by ultrastrength aerospace composite fiber is invincible in anti-explosion, & its performance indicators such as corrosion resistance, high temperature/impact/pressure resistance are far better than that of the widely used modified PEEK engineering plastics vessel (this material is fusible at high temperature, fragile at high pressure and explosive by chemical corrosion). The compressive strength of aerospace composite fiber is up to 10000psi and temperature 500-600°C, fundamentally eliminating safety risks to operator in use.

• Quantified vertical blast/safety bolt design, ensures samples be closed completely and triggers a quantified pressure relief while over pressure; safety bolt (patent) unit, instead of safety membrane & other consumables, ensure the digestion vessel be sealed completely under normal working conditions. And only when the pressure is large enough and may constitute a danger to the safety, the safety bolt will automatically blow out vertically and the cover auto-up to release the pressure, achieving quantified vertical blast pressure-relief to guarantee its well operation. Under normal operation, the safety bolt won't blow out and requires no replacement. In addition, it is easy for venting to open the cover after completion of digestion.

• The industrial-leading pressure measuring technology by piezoelectric crystal and high-precision Pt sensor temperature measurement and control, through closed-loop control of microwave power by inverter technology, ensures the accuracy of pressure and temperature monitoring and control. The application of patented piezoelectric crystal brings about complete isolation of samples from pressure measurement system in digestion process, thoroughly solving the problems of cross contamination of samples due to commonly used air pipe in market and of the limitation in digestion samples because of low-pressure proof of air pipe.



• The patented design that the whole set of digestion vessels in chamber always continuous rotates in one direction, breaks conventions of <360° back and forth rotation of the digestion unit, avoiding uneven heating on vessels by microwave and reducing impact on turntable motor, extending service life.

• Sturdy and durable industrial-grade chamber design strengthen its impact resistance; Professional focused microwave design make microwave heating more efficient; Multi-layer chemical resistant coating greatly improves the service life and safety of the system; the popup cushioning explosion-proof sliding chamber door builds a passive safety protection system, easing operation; double-locked self-checking system of the chamber door & the push-type open-door mechanism at the top make the operation simple and easy; efficient exhaust system design achieves fast & safe air-cooled cooling, improving operational efficiency.

• The Gold Award in Automatic Frequency Control of Non-pulse Microwave Power on BCEIA represents that the company not only achieves the accurate closed-loop control of the temperature and pressure, but also improves the efficiency of microwave transmitter of magnetron, realizing energy saving (37.5%).

**Application area:**

Food and drug (milk and dairy products, health food), cosmetics, agricultural and sideline products, aquatic products, biological tissues, various types of feed, energy and petrochemical, geology and mineral resources, environmental resources (air, water, soil), metals, alloys, ceramics, RoH5, medicine, domestic wastes


## Ultrastrength frame closed reaction vessel:

| | |
|---|---|
| **Maximum Pressure** | 15MPa (2250psi) |
| **Maximum sustained temperature** | 300°C |
| **Maximum working temperature** | 250°C |
| **Inner vessel volume** | 100ml |
| **Outer vessel material** | ultrastrength aerospace composite fiber |
| **Inner vessel material** | TFM (Modified PTFE) |
| **Maximum batch capacity** | 8 vessels |

| Model | MDS-100G |
|---|---|
| **Power** | 220-240 VAC 50/60Hz 8A |
| **Microwave frequency** | 2450MHz |
| **Installed power** | 1800W |
| **Maximum output power** | 1000W, non-pulse continuous automatic variable frequency control |
| **Turntable design** | Load 8 it closed digestion vessels at same time |
| **Pressure measurement & control system** | Piezoelectric crystal pressure sensor, pressure control range :0-10MPa (1500 psi), accuracy ± 0.01MPa |
| **Temperature measurement & control system** | High-precision platinum resistor temperature sensor, temperature range :0-300°C, accuracy ±1°C |
| **Outer vessel material** | Explosion-proof outer vessel made of aerospace composite fiber |
| **Inner vessel material** | TFM material |
| **Chamber exhaust system** | High-power anticorrosion axial fan, exhaust speed: 3.1 m 3/min |
| **Operating ambient temperature** | 0-40°C |
| **Working environment humidity** | 15-80%RH |
| **Whole physical size** | 450 x 515 x 510mm (W x D x H) |
| **Net weight** | 40 KG |

FA-46

## FA-46, Fat Analyzer

| Model | FA-46 |
|---|---|
| Measuring range | 0-100% |
| Capacity per batch | 6pcs./batch |
| Sample weight | 0.5-15g (generally 2-5g depending on sample) |
| Solvent cup volume | 80ml |
| Temperature range | Room temp.+5°C - 280°C |
| Temperature accuracy | ±1°C |
| Solvent recovery | ≥80% |
| Reproducibility | ±1% |
| Power supply | 220V 50Hz |
| Power | 1000W |

FA-46 Fat Analyzer is based on the Soxhlet extraction principle and integrates such functions as soaking, extraction, leaching, heating, condensation and solvent recovery. It features sealed metal bath heating with automatic temperature control, ensuring uniform heating and safe operation; six samples can be tested at the same time, and optimal temperature can be selected according to the difference between reagent boiling point & ambient temperature so as to achieve quick analysis; reagents can also be recycled to reduce test cost; and soaking, extraction and solvent recovery can be done in one step. Therefore, this device is characterized by reasonable design, stable performance, good reproducibility, high accuracy, easy operation, saving time and effort, and so on.

### Characteristics:

- Integral metal heating, wide scope and high precision of temperature control.
- Electric circuit is isolated from the extraction space, ensuring device security.
- Timer & timing functions are available.
- Over-temperature alarming and timer reminding functions are available.
- Triple alarms i.e. sound, light, LCD screen word prompts are available.
- Abundant interface contents give simultaneous display of given temp., actual temperature, given time and heating time.
- The lifting connection of linear bearing conduction technique gives smooth & comfortable lifting operation.
- Intelligent man-machine dialogue control system.
- Exclusive air insulation technique leaves the case in room temperature, has thermal insulation and temp. maintenance two functions.
- 5.1" LCD screen and microcomputer control system are adopted.

### Scope of application:

FA-46 Fat Analyzer can quickly separate one substance from solid or semi-solid mixtures, can determine the soluble organic compounds contained in foods, feeds, medicines, soil, sludge, polymers, fiber products, petrochemical products, detergents, rubber, plastics and other materials.

**For example:**

1. Quickly and safely determines the fat in foods, feeds, grains and seeds.
2. Extracts the semi-volatile organic compounds, pesticides, herbicides, etc. from soil.
3. Extracts oils from waste water or sludge.
4. Extracts plasticizer from plastic, rosin from paper or paperboard, grease from leather, etc.
5. Digests, as pretreatment, the solid samples for the gas or liquid chromatography process.

## FA-5, Fat Automatic Analyzer

FA-5

| Model | FA-5 |
|---|---|
| Measuring range | 0.1-100% |
| Capacity per batch | 6pcs./batch |
| Sample weight | 0.5-15g |
| Solvent cup volume | 150ml |
| Temperature range | Room temp.+5°C - 300°C |
| Shortened extraction time | 20—80% |
| Solvent recovery | ≥85% |
| Reproducibility | Relative error 1% |
| Power supply | 220V 50Hz |
| Power | 2400W |
| Size | 650mm x 348mm x 740mm |

FA-5 Fat Analyzer, designed based on the Soxhlet extraction principle, is an automatic crude fat analyzer in which weight method is used to determine the fat content. Such five extraction methods as Soxhlet standard method (national standard), Soxhlet thermal extraction, thermal extraction, continuous flow and Soxhlet CH standard thermal extraction; extraction, leaching, solvent recovery and pre-drying four functions can be automatically achieved; one-piece metal bath heating is used, giving perfect heating effect; color touch screen and its concise interface design bring people new feeling; external operation panel and printing system are adopted; built-in ether leak detection device effectively prevents air pollution and well protects test safety.

## FA-5, Fat Automatic Analyzer

### Characteristics:

- Colorful and pleasing touch screen with concise interface design and external small-size operation panel provide easy operation & save space.
- Five exclusive extraction methods are at your option.
- Test process can be suspended or resumed at any time, offering flexible control.
- One-piece metal bath heating gives quick, uniform, stable & safe temperature rise.
- Wide scope of temperature control, applicable for the organic solvents with different boiling points.
- Independent timer and timing circulation system give accurate control of the test.
- External printing system is at your free choice and saves cost.
- Ether leak alarming ensures test operator safety at all times.
- Real-time monitoring of device abnormalities.
- Automatic cooling water control saves water & protects environment.
- Efficient solvent recovery system.

### Five extraction methods and four functions

FA-5 fat analyzer boasts such five extraction methods as Soxhlet standard method (national standard), Soxhlet thermal extraction, thermal extraction, continuous flow and Soxhlet CH standard thermal extraction for user option, & such four automatic functions as extraction, leaching, solvent recovery and pre-drying. It's designed according to our investigation over 3000 users, well catering for user demands.

### Powerful temperature control capacity

One-piece metal bath heating method is used, giving quick and uniform temperature rise; FA-5 dedicated timer and time control system enable user to easily obtain accurate test results.

### Safe and eco-friendly

The built-in ether leak detection device, being subject to 500 rounds of tests, enjoys reliable safety performance; solvent recovery system and automatic cooling water control system show user and environment technology considerations, without worrying about any environment pollution during the test process.

### Scope of application

FA-5 fat analyzer is widely used in agriculture, food, environment & industries and other fields, ideal for fat test in the food, fuel, feed and other industries, can also be used for the extraction or determination of soluble organic compounds in medicines, soil, sludge, detergents and so on.


FIA-6

FIA-6 Fiber Analyzer is an analysis Instrument used to tn the crude fiber content of samples through acidic or alkaline hydrolysis, flushing and filter process. FIA-6 functions Include automatic solution adding, automatic pre-heating and so on. Infrared tube heating is used, and high-precision soak extraction and filter ensure test precision; high-definition color LCD screen displays temperature and time.

FIA-6 Fiber Analyzer is applicable for the test of crude fiber contents of plants, feed foods and other agricultural products, and testing detergent fibers, cellulose, semi-cellulose, lignin and other relevant parameters.

## FIA-6, Fiber Analyzer

| Model | FIA-6 |
|---|---|
| Measuring range | 0.1-100% |
| Sample weight | 0.5-3g (generally 1g) |
| Measuring capacity | 6 samples/batch |
| Reproducibility | >1% in case of 1-30% fiber content |
| Accuracy | ±0.1% |
| Power supply | 220V 50Hz |
| Power | 3.2KW |
| Overall Size | 482mm x 560mm x 465mm |
| Weight | 45kg |

### Characteristics:

- Advanced infrared heating manner gives high heating efficiency and excellent control property.
- U S. Imported filter pump boasts high acid/alkali resistance, good stability and long service life.
- High-precision acid/alkali filter device maintains samples in good condition.
- Three pre-heating routes of acid/alkali distilled water can be controlled separately, and digestion heating is under separate control, easy for setting adjustment.
- Reagent pre-heating. adding. sample filtration back flushing and other functions are all under electric and automatic control.
- Six samples can be dealt with at the same time. and sample digestion time can be set freely.
- Stable, rapid and safe automatic filtration back-flushing effectively prevents sample blockage.
- 5.7" high-definition color LCD screen displays current test status; intelligent HMI is available.

**Professional core parts:** FIA-6 Fiber Analyzer uses u.s. imported high acid/alkali resistant long-life filter pump & high-precision acid/alkali filter device, achieves the breakthrough of internal essential parts: high-efficient infrared tube heating greatiy enhances temperature control & heat efficiency.

**Superior test assistant:** FIA-6 Fiber Analyzer can deal with 6 samples at the same time, & the sample digestion time can be set freely: 3 pre-heating routes of acid/alkali distilled water can be controlled separately, giving extremely easy operation.

**Intelligent software system:** 5.7" high-definition color LCD screen display current working status, temp., time & other information: high-efficient infrared heating system includes 2 work modes which can be selected as needed: intelligent status locking function can prevent any accidents due to error operation: the limit of longest fluid adding time prevents solution overflowing arising from error operation.

MIA-SLP

## MIA-SLP/MIA-SLP-A, Economy Milk Analyzers

**MIA-SLP 30sec:** Standard 30sec.
**MIA-SLP 60sec:** Standard 60sec.
**MIA-SLP-A 30sec:** Automatic 30sec.
**MIA-SLP-A 60sec:** Automatic 60sec.

### MIA-SLP/ MIA-SLP-A Options & Accessories:

- MIA-EP: External Printer.
- MIA-HF: Measuring high fat samples (cream) up to 45% (High Density).
- MIA-DCP: Milk Data Collection Program.
- MIA-PH: pH measurement - function.
- MIA-CON: Conductivity measurement function.
- MIA-P: pH probe.
- MIA-EK: External keypad.
- MIA-USB: USB.
- MIA-RTC: Real time clock.

### Consumables:

- MIA-B7: Buffer solution Ph 50 ml (pH7.00±0.01/20°C).
- MIA-B4: Buffer solution pH 50 ml (pH4.00±0.01/20°C).
- MIA-B5ms: Buffer solution conductivity 50 ml (5.02 (±5%) mS/cm (18±0.1°C).
- MIA-ALC: Alkaline cleaning powder.
- MIA-ACC: Acidic cleaning powder.
- MIA-PAPER: Printer paper roll.

| Model | MIA-SLP/MIA-SLP-A | | |
|---|---|---|---|
| Measuring time | Measuring parameters | Standard complete | Additional options |
| 60 Sec | FAT – 0.01% – 25%<br>SNF – 3% – 15%<br>Density – 1015 –1040kg/m³<br>Proteins – 2% – 7%<br>Lactose – 0.01% – 6%<br>Water content – 0% – 70%<br>Temp. of milk – 1°C– 40°C<br>Freezing point – -0.400–0.700°C<br>Salts – 0.4 – 1.5%<br>PH – 0 – 14 ±0,05% (option)<br>Conductivity – 3 – 14 [mS/cm]±0,05% (option)<br>Total solids – 0 –50% ±0,17(option) | 1. Hoses-spare pipes-1/2pcs<br>2. Sample holders-plastic mugs-2 pcs<br>3. Switching adapter: input: 100-240 V~1.6A max. 50-60Hz<br>4. output: +12V 4.17A min.<br>5. Output power: 50-65W<br>6. Operation Manual<br>7. Standard Calibrations: Cow-Sheep-UHT<br>8. Cardboard Box<br>9. CD – Service pack | Ph option 0-14 |
| 30 Sec | | | Conductivity 3-14ms/cm<br>Total Solids 0-50% |

MIA-S

## MIA-S/MIA-SA, Standard Milk Analyzers

| Model | MIA-S/MIA-SA | | |
|---|---|---|---|
| Measuring time | Measuring parameters | Standard complete | Additional options |
| 90 Sec | FAT – 0.01% – 25%<br>SNF – 3% – 15%<br>Density – 1015 –1040kg/m³<br>Proteins – 2% – 7%<br>Lactose – 0.01% – 6%<br>Water content – 0% – 70%<br>Temp. of milk – 1°C– 40°C<br>Freezing point -0.400 –0.700°C<br>Salts – 0.4 – 1.5%<br>PH – 0 – 14 ±0,05% (option)<br>Conductivity – 3 – 14 [mS/cm]±0,05% (option)<br>Total solids – 0 –25% ±0,17(option) | 1. Hoses-spare pipes-2pcs<br>2. Sample holders-plastic mugs-2 pcs<br>3. Switching adapter: input: 100-240 V~1.6A max. 50-60Hz<br>4. output: +12V 4.17A min.<br>5. Output power: 50-65W<br>6. Operation Manual<br>7. Standard Calibrations: Cow-Sheep-UHT<br>8. Cardboard Box<br>9. CD – Service pack | Ph option 0-14 |
| 50 Sec for SA 60 Sec for S | | | Conductivity 3-14ms/cm |
| 30 Sec for S | | | Total Solids 0-25% |

**MIA-S:** Standard. **MIA-SA:** Standard Automatic.

embedded printer • embedded keypad • integrated weight scales • additional serial printer • matrix printer (option) • external keypad (option) • peristaltic pump – automatic cleaning • knee-joint (mobile) input pipe • adjustable to the input pipe pH probe holder • possibility of using different sample holders • integrated pH & conductivity measuring • self calibration without computer.


## MIA-CC, Milk Collecting Center

| Model | MIA-CC | | |
|---|---|---|---|
| Measuring time | Measuring parameters | Standard complete | Additional options |
| 50 sec | FAT – 0.01% – 25%(option 45 %)<br>SNF – 3% – 40%<br>Density – 1000 –1160kg/m³ (1160 kg/m³ option)<br>Proteins – 2% – 15%<br>Lactose – 0.01% – 20%<br>Water content – 0% – 70%<br>Temp. of milk – 5°C– 40°C<br>Freezing point – -0.400 –0.700°C<br>Salts – 0.4 – 4%<br>PH – 0 – 14 ±0,05% (option)<br>Conductivity – 2 – 14 [mS/cm] ±0,05% (option)<br>Total solids – 0 –50% ±0,17(option)<br>Kg From 0 – 150 kg ±0,10 kg (option) | 1. Hoses-spare pipes-2pcs<br>2. Sample holders-plastic mugs–2 pcs<br>3. Switching adapter: input: 100–240 V~1.6A max. 50–60Hz<br>4. output: +12V 4.17A min.<br>5. Output power: 50–65W<br>6. Operation Manual<br>7. Standard Calibrations: Cow-Sheep-UHT<br>8. Cardboard Box<br>9. CD – Service pack | Ph option 0–14 |
| | | | Conductivity 2–14ms/cm |
| | | | Total Solids 0–50% |
| | | | High Fat 45% High Density |
| 30 sec | | | Integrated scales |
| | | | Accumulator with charger |
| | | | Real time clock |
| | | | Remote display |

**Environmental Conditions:**
Ambient air temp. — 10°C – 40°C (option 43°C) • Milk temp. — 1°C – 40°C • Relative humidity — 30% – 80%
**Electrical Parameters:** AC Power Supply voltage – 220V/110VDC • Power Supply voltage – 12V to 14,2V • Power Consumption – 30W max.
**Mechanical Parameters:** DIM.: W290xD300xH330mm • Weight < 5 kg.


## MIA-LW, Ultrasonic Milk Analyser based on MS Windows and Database applicatiom

**High-end ultrasonic technology for analyzing any kind of milk**
• Internet cloud services • E-mail & SMS support • Multi-language support • Touch-screen display • Wireless keypad & mouse.

**Key Features:**
• User-friendly: simple in operation, maintence, calibration & installation
• Portable & compact design
• Very small quantity of milk required
• Low power consumption
• No use of hazardous chemicals
• One year full waranty.

**Specifications Lactoscan MCCW:**

| Parameter | Measuring range | Accuracy |
|---|---|---|
| **Fat** | From 0.01% **to 45%** | ±0.06% |
| **SNF** | From 3% **to 40%** | ±0.15% |
| **Density** | From 1000 to **1160** kg/m³ | ±0.3 kg/m³ |
| **Protein** | From 2% to 15% | ±0.15% |
| **Lactose** | From 0.01% to 20% | ±0.20% |
| **Added Water content** | From 0% to 70% | ±3.0% |
| **Temperature of milk** | From 5% to 40°C | ±1°C |
| **Freezing point** | From –0.400 to –0.700°C | ±0.005°C |
| **Salts** | From 0.4 to 4% | ±0.05% |
| **pH** | From 0 to 14 | ±0.05% |
| **Conductivity** | From 2 to 14 mS/cm | ±0.05 (mS/cm) |
| **Kg** | From 0 to 150 kg | ±0.025 kg |
| **Total solids** | From 0 to 50% | ±0.17% |

**Functions:** • Input information • Communication-SMS & E-mail • Active Formulae • System log.

**Tables & formulae-delivers & price:**
• Reports: shift, daily, monthly, deliverer daily report, deliverer monthly report

**Database services:**
• Archive DBRes • Restore DBRes • Init DBRes • Archive DBDel • Restore DBDel • Archive all databases • Restore all databases • DB server.

**Advantages:** • remote modification of the rate-charts • remote support and maintenance • remote alert for changes in calibration.

**Measuring Parameters:**
Fat • Solids-non-fat (SNF) • Total solids • Density • Protein • Lactose • Milk sample temperature • Added water • Salts • Freezing point • PH • Conductivity • Kg • Ion meter.

**Environmental conditions:**
Ambient air temperature 10°C – 40°C (Option) 43°C
Milk temperature 1°C – 40°C
Relative humidity 30%–80%.

**Electrical parameters:**
Switching asdapter
Input: 100–240V ~ 1.6A max. 50–60Hz
Output: +12V 4.17A min.
Output power: 50–65W.

**Mechanical parameters:**
Dimensions: (WxLxH) 250x290x300mm
Weight: 7kg
Stailess steel box.

# ANALYZERS Flour/Grain


NIR-MS-2000-C2F

## NIR-MS-2000-C2F, Flour Analyzer

The NIR-MS-2000-C2F Flour Analyser is a powerful Near Infrared Transmission spectrophotometer capable of measuring protein, oil and moisture in cereal grains, and protein, moisture, starch damage, water absorption and ash in flour. The instrument uses near infrared transmission spectra and supports a range of sample cells for whole grains and flour as well as slurries and liquids. The NIR-MS-2000-C2F uses a moving sample cell to average spectra over a wide sample area.

| Model | NIR-MS-2000-C2F |
|---|---|
| **Features** | **Benefits** |
| **NIR Transmission technology** | Same NIR technology as used by AWB, Graincorp, CBH and Ausbulk |
| **Broad Spectral Range** | 720–1100nm Multiple constituent analysis<br>Optimum PLS calibrations<br>1st and 2nd derivative spectral data<br>Qualitative and quantitative analysis |
| **Diode Array Optics** | Unaffected by vibration<br>Independent of orientation<br>Rugged, stable and compact |
| **Internal Computer, Keyboard, LCD** | Stores calibrations and predicts constituents onto a LCD<br>Save results using alpha/numeric characters |
| **RS232 Serial Port, USB Memory Device** | Provides a convenient method of uploading stored data to a PC or to download calibrations to the instrument |
| **5 Sample Cells Available (Supplied with 3 piece)** | 8mm cell – canola, powders<br>15mm cell – barley, sorghum<br>18mm cell – wheat, oats, triticale<br>28mm cell – lupins, faba beans, chick and field peas<br>Powder cell – flour, meals, semolina |
| **Sample Transport Module (STM)** | Scans large sample area<br>Automates multiple sample loadings |
| **Specifications** | |
| **Scan Range** | 720–1100nm |
| **Pixels** | 38 |
| **Scan Speed** | 2–4 seconds |
| **Power** | 110/240VAC, 19VDC |
| **Physical** | 12kg, 450 x 380 x 270mm |
| **Applications** | |
| **Wheat** | Protein and moisture |
| **Durum** | Protein and moisture |
| **Flour** | Protein, moisture, starch damage, water absorption, dough stability, dough strength, ash |
| **Semolina** | Protein and moisture |
| **Meal** | Protein, oil, ash and moisture |


NIR-MS-3000F

## NIR-MS-3000F, Grain and Flour Analyser

**Analytical Solution for Flour Millers, Grain Processors & Food Manufacturers**

### Near Infrared Transmission (NIT) Spectroscopy:

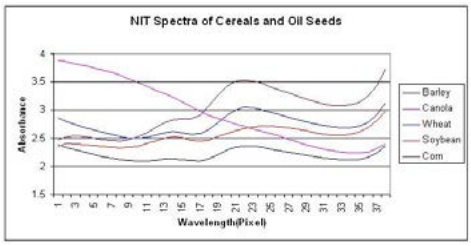
Near Infrared Transmission Spectroscopy is the most widely used technology for measuring protein, oil and moisture in grains and oil seeds. NIT analysers offer farmers, grain buyers, flour millers, pasta producers and grain processors a rapid means of determining the composition of their incoming grains, their process streams and their final products. The NIR-MS-3000F Grain and Flour Analyser require no grinding & are designed for ease of use. The same system measures whole grains of wheat as well as flour and meals.
The NIR-MS-3000F Grain and Flour Analyser can be coupled with the SeedCount Image Analysis System and Specktek software to provide a complete wheat and flour measurement system:

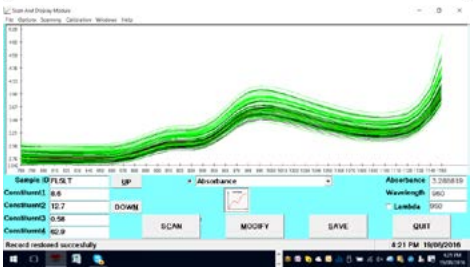
### Specification:

- Touch Screen Operation
- Measures Protein & Moisture in Wheat
- Measures Protein, Moisture, Ash, Water Absorption and Starch Damage in Flour and Semolina • Weighbridge software available • Internet software available.

Once the data fields are completed, the information is stored in the on board memory and can then be posted to the web site where it can be retrieved form a Smart Phone, Tablet or PC.
Reports are available at the press of a button for:

- Tabulated results
- Spectra
- Trends Plots
- Bin Averages for each silo, bunker or shed..




## Image Analysis System and Specktek Software:

- Touch Screen Operation
- Measures Length, Width, Thickness
- Measures Colour
- Measures Defects and Broken Seeds
- Measures Diseases including Fusarium, Blacktip, Smut, Yellow Berry
- Flour Yield
- Measures Specks in Flour and Semolina.

It includes a high resolution scanner, multiple sample tray system & a powerful set of image analysis routines to measure the physical characteristics of grains, flour and semolina.

## How the NIR-MS-3000F Analysers work:

Light from the lamp, passes through a sample of grains or flour. The light bounces off the surfaces of the grains or flour 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 wavelengths. The NIT spectrum contains information about the concentration of these components. Calibration models, stored in the MRC's computer, converts this information to % Protein, % Moisture, % Oil, % Starch, Water Absorption and Starch Damage and displays the results on the screen.
Seeds are spread over the sample tray & inserted into the scanner module.
The SeedCount software draws a border around each seed and uses the pixels within the border to define each parameter. 4 black and white scans are collected from a 100 x 100mm flat sample of flour or semolina. The intensity of each spot within these scans are measured and the software determines black and brown specks. The average of the four scans is presented with data shown for Black Large, Brown, Specks, Black/Large ppm, Brown ppm. Reports can be printed or stored.

## Applications:

- Protein and Moisture in Wheat
- Protein, Moisture, Ash, Water Absorption and Starch Damage in Flour and Semolina
- Specks in Flour and Semolina
- Protein and Moisture in Meals
- Protein, Moisture, Oil and Starch in Soybeans, Corn, Rice and other grains and oil seeds.
- Protein, Moisture and Oil in Corn Flour, Rice Flour, Soybean Meal and other processed grain products.

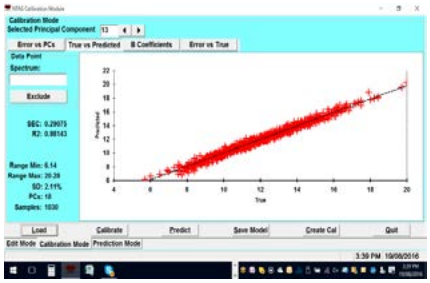
The NIR-MS-3000F is a bench top analyser designed for rapid measurement of protein and moisture in wheat, barley and other cereal grains. Powders including flour, semolina, lupin meal, soybean meal, soybean flour, corn flour and meals can be measured in a 5mm deep rotating dish that is simple to load and empty. Up to 30 sub scans can be collected for either grains or powders and averaged to provide excellent accuracy and precision.
The Touch Screen PC provides users a simple to use interface. Once the NIR analyser has predicted the required parameters, the software prompts a set of customised data fields. The operator enters the following information:

- Sample ID
- Test Weight and Screening Weight
- Storage Location
- Variety
- Grade
- Source(Farm, Paddock or Supplier)
- Truck ID.

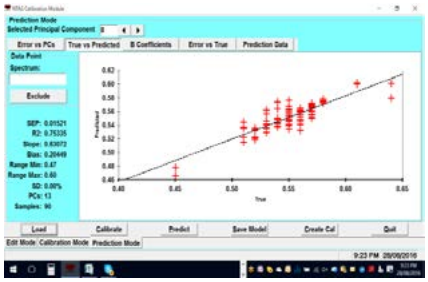
## Near Infrared Transmission (NIT) Analysis of Whole Grains & Flour:

The figures below show the NIT spectra of cereal grains, oil seeds and flour. Light passes through a sample of wheta or flour and NIR light energy is absorbed in proportion to the concentration of the protein, moisture and starch. The more light absorbed at the the specific wavelengths, the higher the concentration of protein, moisture and starch.
Calibration models have been developed to relate the amount of light absorbed by the sample to the concentration of each component. These calibrations are stored in memory and used to predict the protein, moisture and other components in samples of incoming grains and flour.

## Protein and Moisture Calibration Plots in Wheat:



## Protein and Moisture Calibration Plots in Flour:



| Model | NIR-MS-3000F |
|---|---|
| Wavelength Range | 720-1100nm |
| Optical Detector | Silicon Diode Array |
| Lamp | Halogen 12VDC, 10W |
| Scan Rate | 2-4 per scan |
| Sample Tray Pathlengths | 8, 16, 24mm |
| Display | Touch Screen PC Windows & OS |
| Power | 19VDC using 110 -240VAC |
| Operating Temperature Range | 5-45°C, 41-113°F |
| Dimensions (cm) | 40 W x 40 D x 33 H |
| Weight (Kg) | 12Kg |

## CRY-8, Cryoscope


### Features and Benefits:

**• Freezing Point Analyzer for Milk**
The CRY-8 is a modern digital analyzer for the accurate determination of the freezing point temperature in samples of raw milk or milk products (skimmed, pasteurized or UHT-milk).
The most objective indicator for the degree of falsification of milk by additional water is the raising of the freezing point temperature from > -0.512 °C. The CRY-8 complies fully with the international standard ISO 5764/2002(E), IDF 108/2002(E) "Milk" - Determination of Freezing Point – Thermistor Cryoscope Method (Reference Method) and Annex C without the necessity to correct the results to the reference method.
The analyzer measures temperatures in the range from below -0.512°C (pure milk) to -0.527°C in increments of 0.001°C.

**• Peltier Effect**
The measuring principle is the freezing point detection of super cooled liquids based on the Peltier Effect. On the cold side of an Peltier element the milk samples are cooled down below the freezing point in the range 0 to -7°C.

**• 1-Point Calibration**
One-point calibration –the instrument requires for calibration only one distillation water sample. Measurement corrections are done automatically & entered into the microprocessor memory. It is an outstanding advantage of the CRY-8, that calibration is performed in ONE POINT ONLY. In comparison with this, competitive analyzers do need 2 or 3 different calibration points. Once the CRY-8 is calibrated, the CALIBRATION REMAINS STABLE the whole day AS LONG AS THE INSTRUMENT STAYS SWITCHED ON.

**• Aqua Dest - Calibration**
The CRY-8 does not need expensive calibration solutions except distilled water for the zero point. These features, 1-POINT calibration and aqua dest-calibration are unique in the market & they contribute to saving labor time and costs for purchase & storage of expensive calibration standards.

**• 100µl Sample Volume & disposable measuring vessel**
Precise measuring results from only 100µl sample make the CRY-8 disposable measuring vessels not require washing and sterilization.

**• Easy Operation**
After the samples in 1.5ml tubes are inserted into the measuring position the instrument performs automatically the measuring procedure.
function control and error identification are also automatically done by the instrument. High accuracy (+/- 0.002 °C) and repeatability (+/-0.002 °C) of results. Short measuring time ca 1.5 min. Digitally readout of temperature °C and %H2O with printout. The printer can be adapted via RS 232 data port.

**• Simple Installation**
The CRY-8 is air cooled & does not need any connection to cooling water.

**• Robust Housing**
The sheet metal housing with epoxy lacquer paint ensures UTMOST ME-CHANICAL and CHEMICAL RESISTANCE to the laboratory environment.

**• Small Dimensions**
Small instrument weight and dimensions, big resistance to vibrations and hard working conditions (humidity max 85%, ambient temp. 36°C) make the CRY-8 from well applicable in stationary and field conditions.

## FSA-1510, Food Safety Analyzer


### Features:

• Multiple tests on one analyzer, includes Food Safely Analyze, Pesticide Residues, Veterinary Drug Residues. Antibiotic Residues, Determination of Organic Pollutants, Natural Toxins. Safety of Aquatic Products. Analysis of Biological Pollutants etc.
• Widely applied. not only in labs, but also in On-site Screening, like Food and Drug Administration ,Inspection and Center for Disease Control and Prevention, etc.
• Multi-assay enables up to 96 tests and 12 different assays on one plate, 5 sec. for 96 well plate (single wavelength). fast and accurate.

| Model | FSA-1510 |
|---|---|
| Absorbance Range | 0 - 4,500Abs |
| Resolution | 0.001Abs(Displayed). 0.0001Abs (Calculated) |
| Accuracy | ±0.1%or ±0.005Abs |
| Type of Microplate | Standard with96-wellor other kind of microplate & strip |
| Wavelength | 410, 450, 492, 630mm, 4 more filters optional |
| Wavelength Accuracy | ±1nm |
| Band Width | 8nm |
| Calculation Method | ABS, %ABS, Cut-Off, Single Standard, Curve, Multi-Precent,, Precent Log, Linear, Exponential, Power, 4PL Regression |
| Reading Speed | 5 seconds for 96 well plate (single wavelength) |
| Shaking Plate | Shaking time & speed adjustable |
| Memory | >100 programs, 100,000test results |
| Interface | RS-232, USB,SO card & LAN interface |
| Display | 6" LCD, Touch panel |
| Power Supply | AC 110V - 220V ±10%, 50-60Hz |
| Net Weight | 8kg |
| Dimensions (mm) | L460xW330xH190 |

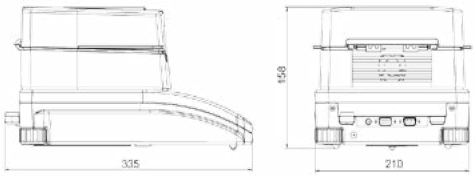
• Variety tests and calculation methods, meeting the requirements from different areas of Food Safety • Easy Windows operation system with touch screen Or mouse, large LCD display • 22 pre programmed tests, covers area in Pesticide Residues, Aquatic Pollution. Natural Toxins, Animal Diseases • Powerful QC function: Grubs, Westguard Multi-rule, Levey Jennings Plot • Professional software design, sample in two different tests, dilution ratio adjustaable • Multiform result output including patient comprehensive report.

## MB-Series, Moisture Analyzers


Moisture analyzers are measuring devices specially designed for determination of moisture content of relatively small samples of various materials.

Moisture analyzer MB enables:
- easy access due to backlit LCD display
- drying profile (standard, mild, step, rapid).
- finish mode (manual, humidity stabilization, automatic, time defined).
- GLP/GMP printouts and reports
- halogen or infrared lamps
- standard and non-standard applications
- optimization of work due to halogen lamps mode

Maximal capacity of moisture analyzer Series MB is 210 g /1 mg.
Moisture content is measured with accuracy 0,01% (0,001% for samples up to 1.5g).
Maximal drying temp. equals 160°C (an extra cost optionis moisture analyzer for drying with temp. 250°C).




### Optional accessories:

Anti-vibration table • Printer • PC keyboard • Disposable pans • Control thermometer • Calibration weight • Computer software.

| Model | MB-50-1-xx/IR/250/M | MB-50-xx/IR/M | MB-110-xx/IR/250/M | MB-210-xx/IR/250/M |
|---|---|---|---|---|
| **Max capacity** | 50g | 50g | 110g | 210g |
| **Reading unit** | 0.1mg | 1mg | 1mg | 1mg |
| **Tare range** | -50g | -50g | -110g | -210g |
| **Max mass of sampling** | 50g | 50g | 110g | 210g |
| **Accuracy of moisture reading** | 0.0001% | 0.001% | 0.001% | 0.001% |
| **Moisture readout repeatability** | +/-0,24% (sample < 2g), +/-0,06% (sample 2-10g), +/- 0,04% (sample >10g) | | | |
| **Max. height of the tested sample** | h= 20mm | | | |
| **Drying chamber dimensions** | 120x120x20mm | | | |
| **Pan size** | Ø90mm, h= 8mm | | | |
| **Range of drying temperature** | max. 160° C (XX, IR and M version), max. 250° C (250 version) | | | |
| **Heating module** | halogen (XX & 250 version), IR emitter (IR version), a heater in metal housing (M version) | | | |
| **Drying modes** | 4 drying modes (standard, quick, stepped, mild) | | | |
| **Auto switch off options** | 3 modes (manual, automatic, time defined) | | | |
| **Additional functions** | sample identification | | | |
| **Power of heating device** | 400W | | | |
| **Working temperature** | +15° - +40°C | | | |
| **Power supply** | 230V AC or 120V AC | | | |
| **Net / Gross weight** | 4.9 / 7kg | | | |
| **Packaging size / Display** | 520x390x435mm / LCD (backlit) | | | |

Note: Standard delivery **xx** - halogen, max. 160° C **250** - halogen, max. 250° C **IR** - IR emitter, max. 160° C
**M** - Metal, max. 160°C food industry


## WAM-1/2/3/4, Water Activity Meters - Including Printer

- Work environment: Temperature -10°C ~ 50°C, Relative humidity 0 ~ 95%RH.
- Display mode: Large-screen LCD 128×64.
- Measuring range: Temperature -10°C ~ 50°C, Water activity 0 ~ 1.000aw.
- Measurement accuracy: Temperature ±0.5°C, Water activity ±0.012 (@23°C ±5°C).
- Repeatability: ≤0.008aw.
- Measurement time: 5 ~ 40min, automatic measurement.
- Resolution: Water activity: 0.001aw Temperature: 0.1°C.
- Data processing:
  - The special software can be operated after connected with the computer. It is applicable to the Windows operation system
  - The computer controlled measurement can display the measured data, curve, & save the data
  - The computer controlled measurement can automatically save the result data according to the set product name.

- It can circularly record 5,000 sets of measured data.
- Correction mode: multi-point joint calibration, single-point calibration.
- Measurement points: 1 ~ 4.
- Interface: RS232 interface or USB interface.
- Configuration: data cable, micro printer (option).
- Print function: a. Print at the end of the measurement b. Real-time print.
- Supply voltage: 100 ~ 230VAC±10% 50Hz/60Hz.
- Power consumption: ≤10W.