Lumex Instruments

Insight into mysteries of nature

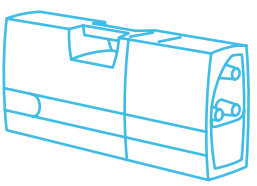
Product catalog

Lumex Instruments develops and manufactures a wide range of laboratory and industrial analytical instruments and supplies them with own measurement techniques.

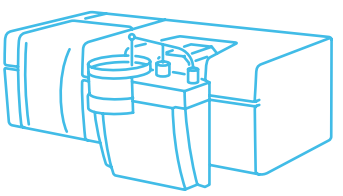
Our products are used in:

- ENVIRONMENTAL CONTROL
- OIL AND GAS INDUSTRY
- ACADEMIC RESEARCH
- AGRICULTURE
- OCCUPATIONAL SAFETY
- FOOD AND BEVERAGE QUALITY CONTROL
- MINING AND GEOCHEMISTRY
- ENERGY INDUSTRY
- LIFE SCIENCES
- PHARMACEUTICALS

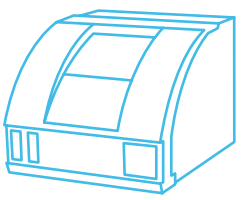
We offer both traditional and new ingenious solutions, conventional instruments and unique technologies. Additionally, we provide well-established, reliable applications, and innovative methods. Since our company was founded, we have developed, manufactured, and sold over 30,000 instruments globally. Lumex Instruments' representative offices and authorized local distributors provide services and training worldwide.



Mercury analyzers and monitors

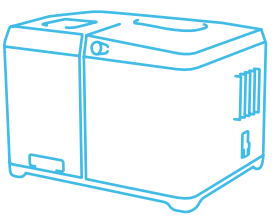


Atomic absorption spectrometers



Capillary electrophoresis systems

Lumex Instruments main product lines



FTIR and NIR spectrometers

Fluorometers

PCR analyzers

Facts and figures

30+
years
of experience

400+
employees
(10% PhD)

100+
authorized
distributors
globally

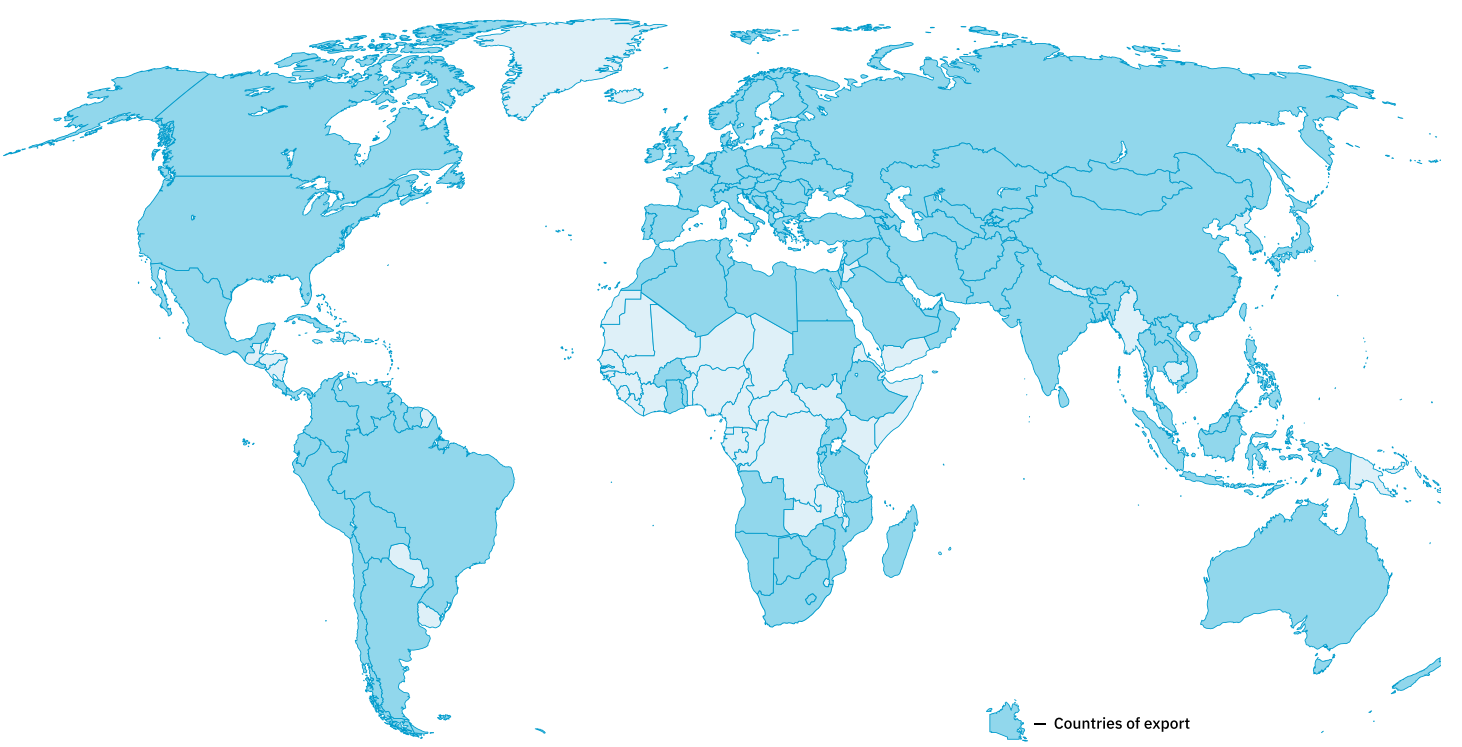
50+
patents
worldwide

150+
applications /
methods

110+
countries of global
sales

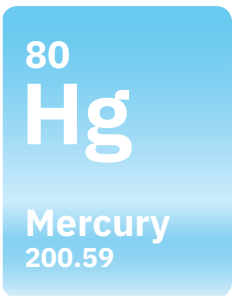
All of our innovations have been created to make analysis cost-effective and easy to run and instruments easy to maintain and repair. We take pride in delivering our products and services worldwide and enjoy working with our valued customers and partners in many industries and countries.

Countries of global sales



Solutions for mercury analysis

All Lumex Instruments mercury analyzers are highly selective and supersensitive instruments based on Zeeman atomic absorption spectroscopy (ZAAS) which enables fast, precise, and cost-effective mercury determination in any media. RA-915 series mercury analyzers do not require any chemicals or compressed gases for the operation. Most of the samples are analyzed directly avoiding time-consuming sample preparation. The instruments are distinguished by their robust design and low operating and maintenance costs, making them notably beneficial.



ZEEMAN AAS ADVANTAGES

- Universal solution for laboratory, field, and industrial applications
- Low detection limit, high selectivity
- Uniquely broad analytical range
- Direct analysis, no sample preparation for most of the sample types
- Low running and maintenance costs

Mercury is a highly mobile, persistent, and toxic pollutant that originates from various natural and anthropogenic sources.
It needs to be analyzed in a wide range of solid, liquid, gaseous, and biological samples.

VARIETY OF APPLICATIONS

Matrix / Samples	Configuration of the equipment
Ambient air	RA-915M, Light-915M2, RA-915AM
Solid samples (soils, rocks, sediments)	RA-915 Lab, RA-915M with PYRO-915+
Coal and other solid fuels	
Oil and oil products	
Biological samples (tissues, blood, hair, etc.)	
Foodstuff, animal feeding, raw materials	
Flue gases with sorbent traps	
Water, wastewaters, aqueous solutions, ppb +	
Water, wastewaters, aqueous solutions, ppt +	RA-915M with RP-92 (Cold Vapor technique)
Biological samples (urine)	
Hydrocarbon gas and other gases	RA-915M with RP-91NG, RA-915AMNG
Hydrocarbon gas with sorbent traps	RA-915M with PYRO-915+

RA-915 Lab

Laboratory mercury analyzer

RA-915 Lab is an automated laboratory mercury analyzer with an optional 45-position autosampler. It provides fast and accurate direct analysis of any kind of solid and liquid samples through thermal decomposition. The unique real-time temperature control system enables optimal analysis processing avoiding any interferences or memory effects regardless of the concentration level.

APPLICATIONS

The analyzer is used for direct mercury determination in:

- Soils, rocks, ores
- Coal
- Crude oil, naphtha
- Food
- Biosamples (tissues, hair, blood, urine)
- Drugs and cosmetics
- Sorbent traps and absorbents
- Fertilizers
- Wastewaters
- and many other materials

Mercury determination with RA-915 Lab analyzer complies with the globally adopted standards based on direct thermal decomposition, such as:

- US EPA 7473, 30B, PS12B
- ASTM D6722, D7622
- EN/TS 17286
- HJ 923
- SN/T 4429.2
- and other standards

FEATURES & ADVANTAGES

- No sample preparation, no compressed gases
- Fast direct analysis of solids, liquids, and biosamples
- Low limit of detection, high selectivity
- Stable calibration
- Optional autosampler for 45 positions
- Automatic closed-loop temperature control system
- Unique dynamic measurement range, no memory effect
- Real-time control of selective and non-selective absorbance
- Programmable furnace for optimal samples decomposition and mercury thermospeciation study
- Low running and maintenance costs

PRINCIPLE OF OPERATION

A weighed sample is introduced into the RA-915 Lab furnace by autosampler or manually. The sample is decomposed according to programmable temperature mode, and gaseous products are carried by purified (mercury-free) air into a heated analytical cell.

RA-915 Lab without autosampler for manual mode

SPECIFICATIONS

Detection limit	0.2 ppb (µg/kg)
Measurement range	0–2 000 ppm (mg/kg)
Sample weight/volume	up to 5 000 mg / up to 2 800 µL
Temperature range of atomizer and analytical cell	50–950 °C
Analysis time	1–5 min
Autosampler	45 positions
Power supply	110–242 VAC, 50/60 Hz, 2 000 W
Dimensions (W×D×H), weight	450 × 840 × 460 mm, 57 kg 450 × 490 × 460 mm, 40 kg without autosampler

RA-915M

Universal Zeeman mercury analyzer

RA-915M is a supersensitive and highly selective analyzer that enables real-time mercury measurement in ambient and indoor air. The working range spans from 0.5 to 200 000 ng/m³. Its portable design allows operation both indoors and outdoors. The analyzer is equipped with a built-in battery, test cell, and data logger.

APPLICATIONS

RA-915M is used for background monitoring, air mercury surveys including continuous measurements from vehicles, indoor and outdoor pollution detection and mapping, demercurization control, occupational health and safety, etc. Direct air mercury measurement complies with EN 15852 standard.

RAPID SOFTWARE FOR MERCURY ANALYZERS

RAPID is a powerful and user-friendly software designed for the operation of **RA-915M** and **RA-915 Lab** mercury analyzers. It provides data acquisition, reporting, and self-diagnostics both for online air/gas monitoring and sample analysis.

- Multiple ready-to-use programmed modes enable optimal treatment of any type of samples. Closed-loop automatic temperature adjustment system provides analysis of complex-matrix samples or highly contaminated samples with no data loss.
- Thermoscanning function gives information about mercury forms (free/absorbed/chemically bounded) in samples.
- RAPID software fully complies with FDA 21 CFR Part 11 requirements.

FEATURES & ADVANTAGES

- Direct continuous measurement; no traps, no compressed gases
- Ultra-low detection limit and high selectivity
- Real-time operation mode for air and gases with 1 s response time
- Attachments for direct mercury determination in liquids, solids, and hydrocarbon gases
- Wide dynamic measuring range (six orders of magnitude)
- Stable calibration
- Auto zero drift correction
- Self-diagnostic with a built-in test cell
- Robust design for laboratory and field applications
- Data logger for 122 hours of data acquisition, averaging, and storage
- Rechargeable battery for up to 8 hours operation

SPECIFICATIONS

Detection limit	0.5 ng/m³
Measurement range	0–200 000 ng/m³
Analysis time	Direct real-time
Response time	1 s
Power supply	90–240 VAC, 50/60 Hz, 12 VDC, 40 W
Dimensions (W×D×H), weight	470 × 110 × 220 mm, 7 kg

LIGHT-915M2

An updated compact light-weight version of the mercury analyzer is specially designed for operation in a contaminated environment. The measurement range up to 200 µg/m³ and the detection limit 0.02 µg/m³ allow rapid air mercury workplace monitoring, pollution mapping, detection of contaminated wastes and equipment, etc. The analyzer has an integrated storage for 12 days of data acquisition.

When combined with dedicated attachments, RA-915M analyzer is used for mercury determination in a wide range of objects, including solid, liquid, biological samples, and natural gas. RA-915M-based sets can be used in stationary and field laboratories.

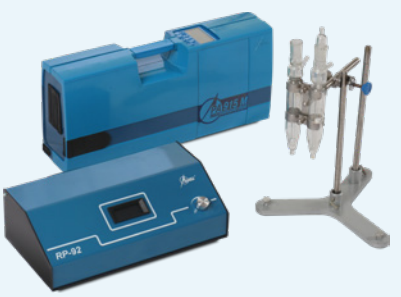
RA-915M with PYRO-915+ attachment is a versatile tool for fast selective analysis of all kinds of solid, liquid, and biological samples by direct thermal decomposition. The samples are analyzed 'as is', without pre-treatment. No compressed gases are required. The measurement range is 0–200 ppm (mg/kg), a routine analysis takes 1–2 min. Programmable furnace enables optimal conditions for samples decomposition and study of the mercury thermospecies having various binding energy with the sample matrix.

The technique of direct analysis complies with ASTM D6722, D7622, EN/TS 17286, US EPA 7473, 30B, PS12B, HJ 923, SN/T 4429.2, and other standards.

RA-915M with RP-91NG attachment provides direct determination of mercury concentration in hydrocarbon gases sampled from a pipeline, cylinder, or Tedlar® bag. Analysis is performed continuously in a gas flow without preliminary accumulation on a gold trap. The technique covers a full range of mercury concentrations in natural gas from ng/m³ to mg/m³ level. High selectivity of Zeeman technique enables direct real-time analysis of complex gases.

RA-915M with RP-92 attachment implements conventional Cold Vapor technique for mercury determination in liquid samples, such as water and aqueous solutions, urine, and other extracts. A wide working range is achieved by using either the multipath cell or the single-path cell of RA-915M analyzer.

Cold Vapor technique complies with ISO 12846, EPA 245.1, ASTM D3223, AOAC 977.22, and other standards.



SPECIFICATIONS

	PYRO-915+ attachment	RP-92 attachment	RP-91NG attachment
Detection limit	0.5 ppb (µg/kg)	0.1 ng/L	0.5 ng/m³
Sampling	up to 1000 mg up to 500 µL	1–20 mL	1–10 L/min
Analysis time	1–5 min	1–2 min	Direct online
Power supply	100–240 VAC, 50/60 Hz, 700 W	100–240 VAC, 50/60 Hz, 20 W	100–240 VAC, 50/60 Hz, 35 W
Dimensions (W×D×H), weight	430×340×135 mm (thermal unit) 400×280×135 mm (power supply unit), 17.5 kg	360×225×125 mm, 7 kg	320×290×160 mm, 6.5 kg

RA-915AM/AMNG

Continuous mercury analyzers

RA-915AM/AMNG online mercury monitors are designed for direct continuous mercury determination in air or hydrocarbon gases. The monitors have a wide working range covering six orders of magnitude from background level below 1 ng/m³.

RA-915AM mercury monitor is used for fully automated mercury measurement in ambient and indoor air. The monitor is mainly used for stationary long-term observations and also can be mounted in moving vehicles.
Optional multiplexer enables air sampling from 2 to 16 points.
Direct ZAAS measurement technique complies with EN 15852 standard method.

RA-915AMNG mercury monitor is designed for continuous online monitoring of mercury in natural hydrocarbon gas. The measurement is performed directly in a gas flow of 4–10 L/min. The monitor covers the full range of the mercury concentrations in raw and processed hydrocarbon gases and can be used for mercury monitoring in pipelines, control of mercury removal units (MRU), control of gas cleaning before liquefaction.

FEATURES & ADVANTAGES

- Direct continuous measurements
- No pre-concentration on sorbent traps
- Low detection limit and wide measurement range
- High selectivity
- No chemicals, no carrier and zero gases
- Low maintenance
- Long-term calibration stability
- Automatic zero drift and span drift correction
- Built-in control and preventive maintenance functions
- Autorun function in case of power supply failures

SPECIFICATIONS

	Range I	Range II	Range III
Measurement range	0–2 000 ng/m³	0–150 000 ng/m³	0–3 000 000 ng/m³
Detection limit	0.1 ng/m³	10 ng/m³	200 ng/m³
Air flow rate	7–10 L/min		
Analyzed air temperature	-20 to +40 °C		
Number of sampling points	1 (2–16 with multiplexer)		
Sampling line	up to 150 m		
Mounting	standard 19-inch rack		
Power supply	110/240 VAC, 50/60 Hz, 120 W		
Dimensions (W×D×H), weight	665 × 482 × 222 mm, 20 kg		

Mercury Measurement Toolkit

Flue gas sampling & analysis

Mercury Measurement Toolkit is designated for rapid and cost-effective measurement of mercury emissions from stationary sources: coal combustion, cement production, non-ferrous metallurgy, waste incineration, etc. The sampling and measurement method is based on sorbent traps. The Toolkit comprises the sampling system with a heated probe, sorbent traps, and the analytical system.

RA-915 Lab analyzer or the set of **RA-915M with PYRO-915+** attachment is used for mercury determination in sorbent traps as well as in coal, co-fired fuels, fly ash, gypsum, sludge, wastewater, etc.

OLM30B is a dual train sampling system for flue gas sampling and analysis.

SORBENT TRAPS of various configurations are used for short- and long-term sampling, mercury speciation determination, sampling and analysis quality control.

FEATURES & ADVANTAGES

- Compliant with US EPA Method 30B; CEN/TS 17286; HJ 917
- Hg speciation of stack gas is possible
- Mobile equipment is easy to use, maintain, and transport
- No special requirements for site preparation
- Wide dynamic measurement range: 0.5 to 50 000 ng
- Fast on-site analysis and results (2–10 minutes per sample)
- No compressed gases
- Lower capital expenditure compared to that of CEM
- Low operating and maintenance costs
- Versatility: analyses coal, ash, sludge, wastewater with the same analytical system

Extraction of a known volume of flue gas is performed through paired in-stack sorbent traps at a fixed flow rate. After the sampling, the sorbent is removed and analyzed for mercury content.

The sorbent traps have at least two sections that should be tested separately: for the primary capture of gaseous mercury and for mercury breakthrough.

Sorbent traps can include an additional spiked section intended to confirm proper sampling and analysis. More sophisticated sorbent traps can include additional sections for oxidized and elemental mercury speciation and scrubber for acid gases removal.

Capel-205

Capillary electrophoresis system

Capel-205 is a capillary electrophoresis (CE) system designed for determination of a wide range of analytes in various types of samples, including water, soil, foodstuffs, fodders, and pharmaceuticals using all main modes of CE.

APPLICATIONS

WATER

- Inorganic anions
  Cl^-, NO_2^-, SO_4^{2-}, NO_3^-, F^-, PO_4^{3-}
- Inorganic cations
  NH_4^+, K^+, Na^+, Li^+, Mg^{2+}, Sr^{2+}, Ba^{2+}, Ca^{2+}
- Bromide, Iodide
- Chlorite, Chlorate, Perchlorate

SOIL, SLUDGE, SEDIMENTS

- Inorganic and organic anions
- Inorganic cations

FEED, FEED RAW MATERIALS AND FODDER ADDITIVES

- Amino acids
- Inorganic anions and cations
- Organic acids
- Vitamins

FOOD AND BEVERAGES

- Organic acids
- Preservatives
- Sweeteners
- Sugars
- Amino acids
- Inorganic anions and cations
- Aromatic aldehydes
- D-, L-isomers of organic acids

PHARMACEUTICALS

- Proteins
- Peptides
- Monoclonal antibodies
- Enantiomers

- and many more

FEATURES & ADVANTAGES

- High separation efficiency
- Multiple components determination in one run
- Suitable for various types of analytes (ions, small molecules, proteins, enantiomers etc.)
- Liquid cooling of capillary ensures high reproducibility
- Fast analysis (separation takes 5–15 minutes)
- Simple sample pre-treatment (filtration, dilution, and degassing)
- Low analysis cost (nanoliters of reagents, cheap consumables)
- Elforun software complies with FDA 21 CFR part 11
- IQ/OQ protocols

Capillary electrophoresis method is based upon the differential migration of components of aqueous samples within a narrow-fused silica capillary driven by an electric field. Separated components are detected and quantified by a highly sensitive UV detector.

SPECIFICATIONS

Detection wavelength	190–400 nm, light source — deuterium lamp
Analysis	Constant voltage, (+/-) 1-25 (30)* kV, Pressure, up to 100 mbar
Injection	By voltage, from (+/-) 1–25 (30)* kV; by pressure, from -100 to 100 mbar
Rinsing	By pressure, 500–2 000 mbar in 1 mbar steps
Capillary	Length 40–120 cm, internal diameter 50/75 µm Liquid thermostating ±0.1 °C
Autosampler	for 59 standard Eppendorf®-type 1.5 mL vials
Power supply	100–240 VAC, 50/60 Hz, 170 W
Dimensions (W×D×H), weight	470 × 530 × 410 mm, 30 kg

* Maximum voltage value depends upon system modification

MGA-1000

Graphite furnace atomic absorption spectrometer

MGA-1000 is a graphite furnace atomic absorption spectrometer based on the patented Zeeman High Frequency Polarization Modulation (ZHFPM) technique. MGA-1000 is designed for determination of a wide range of elements in various types of samples such as water, soil, foodstuffs, fodders, pharmaceuticals, and more. The instrument offers high analysis selectivity and sensitivity.

APPLICATIONS

- **WATER**
- **SOIL, SLUDGE, SEDIMENTS**
- **FEED, FEED RAW MATERIALS, AND FODDER ADDITIVES**
- **FOOD AND BEVERAGES**
- **MINING AND GEOCHEMISTRY**
- **PHARMACEUTICALS**

ELEMENTS

Li	Be								
Na	Mg	Al	Si	P					
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni
Cu	Zn	Ga	Ge	As	Se				
Rb	Sr	Y	Mo	Ru	Rh	Pd	Ag	Cd	In
Sn	Sb	Te							
Cs	Ba	Ir	Pt	Au	Hg	Tl	Pb	Bi	

FEATURES & ADVANTAGES

- Simultaneous measurement of total and background absorptions
- Quasi-double beam optics eliminate drifts and enable direct operation with no warm-up needed
- Compact and effective cooling system
- Smart 47-position autosampler
- Cold Vapor/Hydride Generation apparatus is available
- Stabilized temperature platform furnace (STPF) concept is implemented
- Bright Electrodeless Discharge Lamps (EDL) provide low detection limits and direct As and Se determination at levels from 1 ppb without hydride generation technique
- Easy-to-use routine analysis of Na, K, Mg, and Ca is possible
- Eltherm software complies with FDA 21 CFR part 11
- IQ/OQ protocols

SPECIFICATIONS

Wavelength range	185–900 nm
Furnace heating rate	up to 4 500 K/s
Maximal temperature of the furnace atomizer	3 000 °C
Typical tube lifetime	Up to 800 analysis cycles
Argon flow rate (high purity argon)	< 2 L/min
Autosampler capacity	47 positions
Power supply	Three-phase 220/380 VAC, 50/60 Hz or 120/208 VAC, 50/60 Hz
Power consumption	0.1 kW in standby 6 kW in atomization mode
Dimensions (W×D×H), weight	800 × 475 × 310 mm, 50 kg

InfraLUM FT-08

FTIR spectrometer

InfraLUM FT-08 is a conventional Fourier Transform mid-infrared spectrometer designed for measurement of transmission, attenuated total reflectance and diffuse reflectance spectra of liquid, solid, and gaseous micro- and macro-samples.

APPLICATIONS

- **LUBRICANTS AND OIL PRODUCTS TESTING**
- **POLYMER MATERIALS TESTING**
- **PAINTS AND COATINGS ANALYSIS**
- **SEMICONDUCTOR MATERIALS TESTING**
- **ENVIRONMENTAL CONTROL**
- **SCIENTIFIC RESEARCH**
- **PHARMACEUTICAL INDUSTRY**
- **FORENSIC SCIENCE**

FEATURES & ADVANTAGES

- High signal-to-noise ratio
- High resolution
- Automatic optical stabilization system
- Built-in smart total self-diagnostics system
- Hermetically sealed optical compartment with the automated moisture monitoring system
- Antivibration platform available
- Fully compatible with Specac® and PIKE Technologies® accessories
- SpectraLUM software complies with FDA 21 CFR part 11
- IQ/OQ protocols

SPECIFICATIONS

Spectral range	8 000–350 cm^{-1} (KBr optics) 8 000–500 cm^{-1} (ZnSe optics)
RMS signal-to-noise ratio	> 60 000 (4 cm^{-1}, 1 min)
Variable resolution	0.5, 1, 2, 4, 8, 16 cm^{-1}
Wavenumber accuracy	±0.05 cm^{-1}
Interferometer	Vibration- and misalignment-proof patented Double Cat's Eye Interferometer
Power supply	100–240 VAC, 50/60 Hz, 65 W
Dimensions (W×D×H), weight	580 × 550 × 340 mm, 32 kg

InfraLUM FT-12

FT-NIR analyzer

InfraLUM FT-12 NIR analyzer is capable of conducting rapid analysis of diverse agricultural and food products allowing simultaneous determination of main parameters with the utmost accuracy. The analysis is non-destructive and typically does not require sample preparation.

CALIBRATIONS

- **CEREALS, GRAINS, FLOUR**
  protein, moisture, gluten, oil content, fiber, starch
- **LEGUMES**
  protein, moisture
- **OILSEEDS AND PROCESSING PRODUCTS**
  oil content, protein, moisture, amino acids, fiber, ash
- **VEGETABLE OILS**
  acid value, peroxide value, moisture, phosphorus-containing substances
- **FEED, MIXED FODDERS AND FEED RAW MATERIALS**
  protein, moisture, fat, fiber, phosphorus, amino acids, ash
- **MEAT AND FISH**
  protein, moisture, fat, ash, salt
- **MILK AND DAIRY PRODUCTS**
  protein, fat, solids-non-fat, acidity, moisture
- **SAUCES**
  protein, fat, total soluble solids, acidity
- **WINE**
  alcohol, sugars, organic acids, modified extract, pH
- and many more

FEATURES & ADVANTAGES

- Simultaneous determination of all parameters of interest within 1 minute
- High accuracy of results provided by the use of Fourier transform NIR spectrometry
- Whole grain analysis with no sample preparation
- No reagents or consumables required
- Waterproof and dustproof optical compartment of the interferometer
- SpectraLUM/PRO software complies with FDA 21 CFR part 11
- IQ/OQ protocols

InfraLUM FT-12 Industrial model is tailored for use at processing sites with vibrations, unstable power supply, or frequent analyzer relocation. Optimized for liquid and paste samples, it features a stainless steel-protected sample compartment, automatic locking system, antivibration platform, and an optional programmable logic controller (PLC).

SPECIFICATIONS

Analysis time	1 min
Spectral volume	3–60 mL
Spectral range	13 200–8 700 cm^{-1} (760–1 150 nm)
Resolution	8, 16, 32, 64 cm^{-1}
Power supply	90–260 VAC, 50/60 Hz, 110 W
Dimensions (W×D×H), weight	530 × 450 × 380 mm, 32 kg

Fluorat-02

Fluorometric & photometric analyzer

Fluorat-02 is a multifunctional filter fluorometer designed for a quantitative analysis of various types of samples, including water, soil, and food. This instrument allows determination of a wide range of analytes based on fluorescence, chemiluminescence, phosphorescence, and photometry techniques.

APPLICATIONS

WATER

- Aluminum
- Anionic surfactants
- Arsenic
- Chemical Oxygen Demand (COD)
- Nitrites
- Selenium
- Total petroleum hydrocarbons
- Uranium
- Zinc

SOIL

- Total petroleum hydrocarbons

FOOD AND FEED

- Vitamin B1 (thiamine)
- Vitamin B2 (riboflavin)
- Selenium

PHARMACEUTICAL

- Aluminum

MINING AND GEOCHEMISTRY

- Fluorescein
- Rhodamine
- Cyanide

- and many more

FEATURES & ADVANTAGES

- Low detection limits
- Fast analysis with low reagent consumption
- Capable of determination of a large variety of analytes
- COD-analyzer (Chemical Oxygen Demand), when equipped with Termion thermoreactor
- FluoRate software complies with FDA 21 CFR part 11
- IQ/OQ protocols

SPECIFICATIONS

Wavelength range (filter selection)	250–650 nm (Fluorat-02-4M) 250–900 nm (Fluorat-02-5M)
Types of cells	quartz (L = 10 mm) glass vials for COD
Power supply	110–240 VAC, 50/60 Hz, 36 W
Dimensions (W×D×H), weight	305 × 320 × 110 mm, 6.5 kg

AriaDNA

Microchip-based real-time PCR analyzer

AriaDNA real-time PCR analyzer offers highly specific and sensitive qualitative and quantitative analysis of nucleic acids in various samples. Using microchip real-time PCR technique, the instrument employs an extremely fast heating and cooling device to enable rapid amplification and analysis in micro-volumes. This provides optimum sensitivity for medical and other applications.

APPLICATIONS

VETERINARY

- Avian Influenza virus and pathogens
- Cattle diseases pathogens
- African swine fever
- Fish disease pathogens

AGRICULTURE, FOOD SAFETY

- Pathogens in raw and processed food
- Genetically modified lines
- Grapevine diseases
- Potato bacterial and viral pathogens

CLINICAL DIAGNOSTICS, HEALTHCARE

- COVID-19 detection systems, incl. saliva samples
- Influenza A, Influenza B
- SNPs in human genome (Thrombophilia, Warfarin)
- Sexually transmitted infections (STI)
- and many more

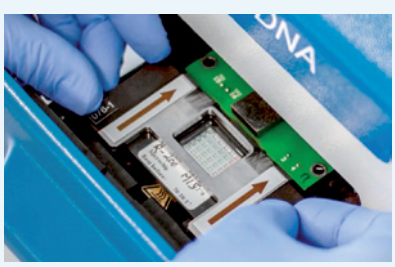
FEATURES & ADVANTAGES

- Short PCR-runtime due to high thermocycling rate
- Low detection limit
- Low sample and reagents consumption
- Simultaneous qualitative and quantitative DNA/RNA analysis
- Flexibility and customization
- Small footprint and low energy consumption
- Software complies with FDA 21 CFR part 11

SPECIFICATIONS

Rate of thermal cycling	heating: 12 °C/s cooling: 10 °C/s
Minimum DNA content in microreactor	1–5 DNA copies
Total PCR analysis time (45 cycles)	from 20 min
Number of microreactors on a microchip	30, 48
Reagents required per analysis	0.5–1.8 µL
Detection channel 1, dye	FAM, SYBR Green I
Detection channel 2, dye	ROX, Cy5
Power supply	90–240 VAC, 50/60 Hz, 100 W
Dimensions (W×D×H), weight	250 × 300 × 190 mm, 5 kg

MICROCHIPS



A microchip is a thin plate made of heat-conducting material with tiny wells known as microreactors. There are two formats of microchips:

- Preloaded microchips with lyophilized PCR reagents (ready-to-use) are designed for specific applications in the areas of medicine, veterinary, and agriculture.
- Empty microchips can be used by the end-user for a number of customized applications with any compatible third-party PCR kits. PCR mixtures of reagents and samples can be added into microreactors in the same way as in a test tube.

Find your local Lumex Instruments distributor:
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