



**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

 FOOD AND BEVERAGE QUALITY CONTROL

 OIL AND GAS INDUSTRY

 MINING AND GEOCHEMISTRY

 ACADEMIC RESEARCH

 ENERGY INDUSTRY

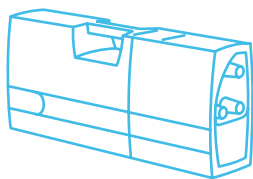
 AGRICULTURE

 LIFE SCIENCES

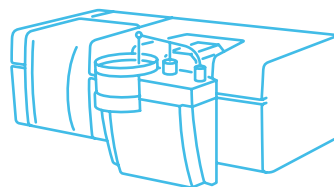
 OCCUPATIONAL SAFETY

 PHARMACEUTICALS

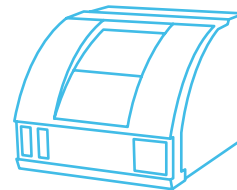
We offer both traditional and new ingenious solutions, conventional instruments and unique technologies. Additionally, we provide well-established, reliable applications, and innovative methods. Since our company was founded, we have developed, manufactured, and sold over 30,000 instruments globally.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



Mercury analyzers  
and monitors

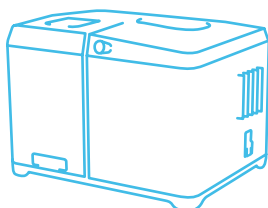


Atomic absorption  
spectrometers



Capillary  
electrophoresis  
systems

### Lumex Instruments main product lines



FTIR and NIR  
spectrometers

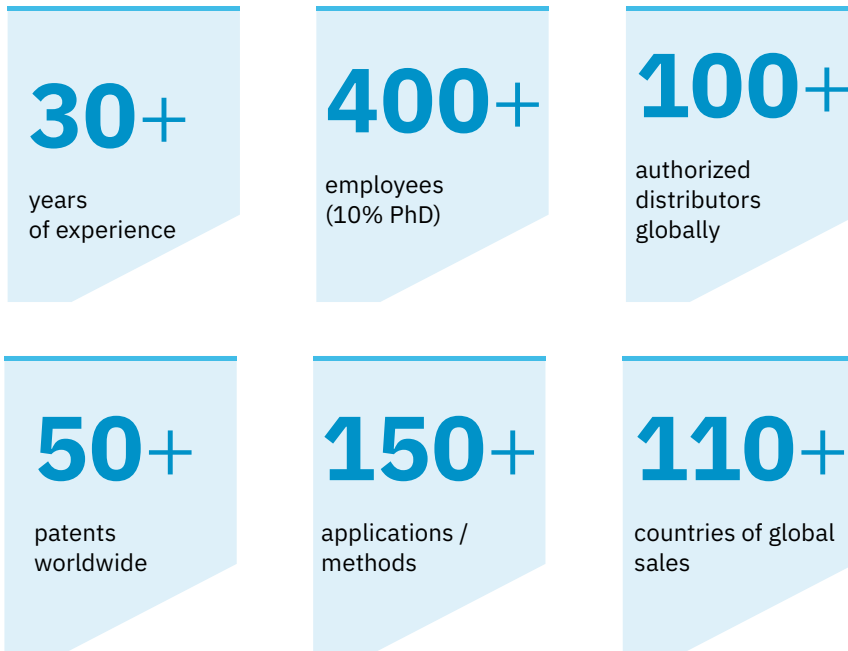


Fluorometers



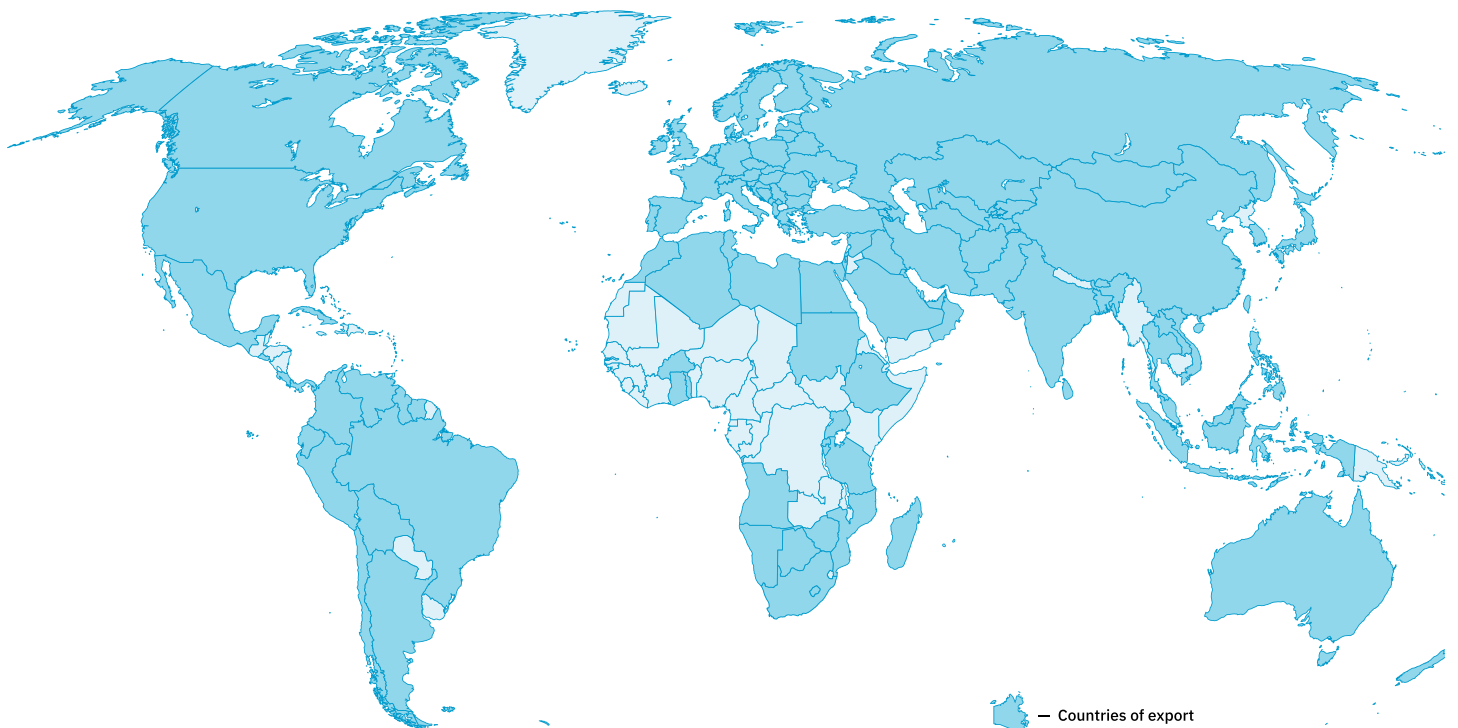
PCR analyzers

## Facts and figures



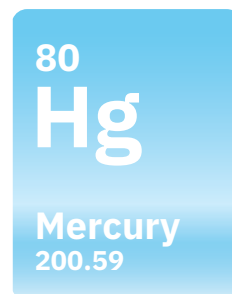
All of our innovations have been created to make analysis cost-effective and easy to run and instruments easy to maintain and repair. We take pride in delivering deliver our products and services worldwide and enjoy working with our valued customers and partners in many industries and countries.

## 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)

Coal and other solid fuels

Oil and oil products

Biological samples (tissues, blood, hair, etc.)

RA-915Lab,  
RA-915M with PYRO-915+

Foodstuff, animal feeding, raw materials

Flue gases with sorbent traps

Water, wastewaters, aqueous solutions, ppb +

Water, wastewaters, aqueous solutions, ppt +

Biological samples (urine)

RA-915M with RP-92  
(Cold Vapor technique)

Hydrocarbon gas and other gases

RA-915M with RP-91NG, RA-915AMNG

Hydrocarbon gas with sorbent traps

RA-915M with PYRO-915+

# RA-915Lab

Laboratory mercury analyzer



RA-915Lab 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-915Lab 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-915Lab 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-915Lab without autosampler for manual mode

## SPECIFICATIONS

<b>Detection limit</b>	0.2 ppb ( $\mu\text{g}/\text{kg}$ )
<b>Measurement range</b>	0–2 000 ppm ( $\text{mg}/\text{kg}$ )
<b>Sample weight/volume</b>	up to 5 000 mg / up to 2 800 $\mu\text{l}$
<b>Temperature range of atomizer and analytical cell</b>	50–950 °C
<b>Analysis time</b>	1–5 min
<b>Autosampler</b>	45 positions
<b>Power supply</b>	110–242 VAC, 50/60 Hz, 2 000 W
<b>Dimensions (W×D×H), weight</b>	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/m<sup>3</sup>. 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-915Lab** 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

<b>Detection limit</b>	0.5 ng/m <sup>3</sup>
<b>Measurement range</b>	0–200 000 ng/m <sup>3</sup>
<b>Analysis time</b>	Direct real-time
<b>Response time</b>	1 sec
<b>Power supply</b>	90–240 VAC, 50/60 Hz, 12 VDC, 40 W
<b>Dimensions (W×D×H), weight</b>	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/m<sup>3</sup> and the detection limit 0.02 µg/m<sup>3</sup> 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.

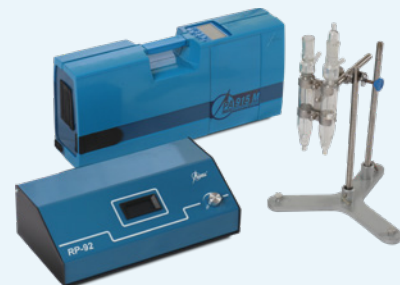


**RA-915M with RP-91NG** attachment provides direct determination of mercury concentration in hydrocarbon gases sampled from a pipeline, cylinder, or Tedlar® bag. Analysis is performed continuously in a gas flow without preliminary accumulation on a gold trap. The technique covers a full range of mercury concentrations in natural gas from ng/m<sup>3</sup> to mg/m<sup>3</sup> 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
<b>Detection limit</b>	0.5 ppb (µg/kg)	0.1 ng/l	0.5 ng/m <sup>3</sup>
<b>Sampling</b>	up to 1000 mg up to 500 µl	1–20 ml	1–10 l/min
<b>Analysis time</b>	1–5 min	1–2 min	Direct online
<b>Power supply</b>	100–240 VAC, 50/60 Hz, 700 W	100–240 VAC, 50/60 Hz, 20 W	100–240 VAC, 50/60 Hz, 35 W
<b>Dimensions (W×D×H), weight</b>	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/m<sup>3</sup>.



**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/m <sup>3</sup>	0–150 000 ng/m <sup>3</sup>	0–3 000 000 ng/m <sup>3</sup>
Detection limit	0.1 ng/m <sup>3</sup>	10 ng/m <sup>3</sup>	200 ng/m <sup>3</sup>
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-915Lab** 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.

## FEATURES & ADVANTAGES

**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. It supports all main modes of CE. The method is based upon the differential migration of components within a narrow-fused silica capillary driven by an electric field. Separated components are detected and quantified by a highly sensitive UV detector.



## APPLICATIONS



### WATER

- Inorganic anions  
Cl<sup>-</sup>, NO<sub>2</sub><sup>-</sup>, SO<sub>4</sub><sup>2-</sup>, NO<sub>3</sub><sup>-</sup>, F<sup>-</sup>, PO<sub>4</sub><sup>3-</sup>
- Inorganic cations  
NH<sub>4</sub><sup>+</sup>, K<sup>+</sup>, Na<sup>+</sup>, Li<sup>+</sup>, Mg<sup>2+</sup>, Sr<sup>2+</sup>, Ba<sup>2+</sup>, Ca<sup>2+</sup>
- 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

## SPECIFICATIONS

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

\* Maximum voltage value depends upon system modification

Lumex Instruments offers a portable, light, and field deployable CE system **Capel-115**. It combines compact size and low weight with all the advantages from the benchtop instrument. The system has a built-in rechargeable battery for 5 hours of continuous operation.

# 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**

### 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

### 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		

### SPECIFICATIONS

<b>Wavelength range</b>	185–900 nm
<b>Furnace heating rate</b>	up to 4500 K/sec
<b>Maximal temperature of the furnace atomizer</b>	3000 °C
<b>Typical tube lifetime</b>	Up to 800 analysis cycles
<b>Argon flow rate (high purity argon)</b>	< 2 l/min
<b>Autosampler capacity</b>	47 positions
<b>Power supply</b>	Three-phase 220/380 VAC, 50/60 Hz or 120/208 VAC, 50/60 Hz
<b>Power consumption</b>	0.1 kW in standby 6 kW in atomization mode
<b>Dimensions (W×D×H), weight</b>	800 × 475 × 310 mm, 50 kg

# InfraLUM FT-08

FT mid-IR Spectrometer



InfraLUM FT-08 is a conventional Fourier Transform 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
- Built-in smart total self-diagnostics system
- Hermetically sealed optical compartment with the automated moisture monitoring system
- Fully compatible with PIKE Technologies® and Specac® accessories
- SpectraLUM software complies with FDA 21 CFR part 11
- IQ/OQ protocols

## SPECIFICATIONS

<b>Spectral range</b>	8 000–350 $\text{cm}^{-1}$ (KBr optics) 8 000–500 $\text{cm}^{-1}$ (ZnSe optics)
<b>RMS signal-to-noise ratio</b>	> 60 000 (4 $\text{cm}^{-1}$ , 1 min)
<b>Variable resolution</b>	0.5, 1, 2, 4, 8, 16 $\text{cm}^{-1}$
<b>Wavenumber accuracy</b>	$\pm 0.05 \text{ cm}^{-1}$
<b>Power supply</b>	100–240 VAC, 50/60 Hz, 65 W
<b>Dimensions (W×D×H), weight</b>	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 1.5 minutes
- 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

Optionally, the specifically designed models are available:

- Industrial InfraLUM FT-12 adapted for industrial applications in manufacturing environment;
- InfraLUM FT-12 with Whole Grain dispensing module and automatic cell filling for the analysis of whole grains.

## SPECIFICATIONS

<b>Analysis time</b>	1.5 min
<b>Spectral volume</b>	3 – 60 ml
<b>Spectral range</b>	13 200–8 700 cm <sup>-1</sup> (760–1 150 nm)
<b>Resolution</b>	8, 16, 32, 64 cm <sup>-1</sup>
<b>Power supply</b>	90–260 VAC, 50/60 Hz, 110 W
<b>Dimensions (W×D×H), weight</b>	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

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

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





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