ECROS
group of companies

ECROS GROUP LABORATORY EQUIPMENT

Product overview
2017

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Dear colleagues!

The ECROS Group was founded in 1990 in Saint-Petersburg. The ECROS Group is an innovative technology enterprise in the market of laboratory equipment and analytical instruments. ECROSKHIM is a member of the Group and one of the leading manufacturers of laboratory and analytical instruments, laboratory ware, consumable materials, laboratory furniture and CRMs in Russia.

You are now keeping the catalog which presents general and special-purpose equipment for ecological, petrochemical, medical, research and school laboratories.

We are proud of our western standard quality management system which has been implemented and certified in accordance with the requirements of ISO 9001-2011, which includes all necessary licenses and notices for the production of measuring instruments and various laboratory equipment. We develop products, like pilot batches and individually customized products from the first idea, through to engineering and the final preparation for serial production. A highly skilled specialists with great work experience in close cooperation with our scientific department, providing the necessary methodological support of the products and covering the testing in the laboratory.

The convenient structure and original design of the new catalog will allow you easily finding and learning technical specifications of the presented equipment.

We hope that the catalog "Laboratory equipment of ECROS Group" will assist you to find the solutions to all necessary issues.


MANAGEMENT SYSTEMS
CERTIFICATION BODY
Test-St. Petersburg Co. Ltd.

CERTIFICATE

Registration № РОСС RU.13СК03.00174

This is to certify that Management System of the company

LLC «Ecohim»

Real Address: 21, lit. A, office 17 H, Koltsova str. Saint-Petersburg, 194214, Russia

Legal Address: 22, korpus H, office 403,406, 17 liniya, Saint-Petersburg, 199178, Russia

meets the requirements of

GOST ISO 9001-2011 (ISO 9001:2008)

applied to the following scope of activities:

sales of equipment, measuring instruments, furniture, glass and plastic ware, chemical reagents and consumable materials for the analytical and test laboratories;
design and production of the certified reference material for metrological support of test oil, oil products and measurement of ecotoxicants content in environment objects;
design and production of analytical devices and laboratory equipment for chemical and biochemical laboratories.

Date of registration 21.07.2014 | Date of expiration 21.07.2017 | Management System certified since 10.04.2008

Head of Certification Body G.N. Ivanova | Audit Team Leader E.V. Yakovlevа

Failure to meet the conditions of certification makes the certificate invalid.
Conditions for certification are available at the web site at www.test-spb.ru


IQNet
THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

IQNet and TEST-St.Petersburg
hereby certify that the organization

LLC «Ecohim»

Real Address: 21, lit. A, office 17H, Koltsova str. Saint-Petersburg, 194214, Russia
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for the following field of activities

sales of equipment, measuring instruments, furniture, glass and plastic ware, chemical reagents and consumable materials for the analytical and test laboratories;
design and production of the certified reference material for metrological support of test oil, oil products and measurement of ecotoxicants content in environment objects;
design and production of analytical devices and laboratory equipment for chemical and biochemical laboratories

has implemented and maintains a

Management System

which fulfils the requirements of the following standard

ISO 9001:2008

Issued on : 2014 - 07 - 21
Validity date : 2017 - 07 - 21

Registration Number: RU - 13CK03.00174

Michael Drechsel, President of IQNet | Prof. Vladimir Okrepilov, Chairman of Coordination Council of TEST-St.Petersburg Co.Ltd.

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SPECTROPHOTOMETERS PE

PE spectrophotometers (PE-5300VI, PE-5400VI, PE-5400UV) are developed in compliance with the requirements imposed in laboratories to spectral equipment for environmental control (water, air, soil), quality control of drinking water, process control of raw materials and finished products in various industrial fields (food, chemical, pharmaceutical, metallurgical, petrochemical)

ADVANTAGES

- Absorbance value doesn't depend on a cuvette position in a cell holder.
- The universal cell holder has the possibility to install the following types of cuvettes.

  – cuvettes 24mm width (RUS standard) and 5-100mm length;

  – cuvettes (EU standard) 5-50mm length (with adapter).
- To simplify setup procedure, the cuvettes can be arranged staggered not affecting metrological characteristics.
- There is a set of 4 control light filters: 3 pieces for checking of photometric characteristics and 1 piece for checking of wavelength accuracy.
- Universal adapter plugs are included in the set (they are used for dark current compensation and placement for EU standard cuvettes and control light filters).
- The possibility of optical density measurement of liquids in vials and tubes with high accuracy (with additional COD vial holder).
- The computer software is included in the standard set allows:

  – entering measurement results directly from the instrument with further processing in accordance with recommendations of regulations;

  – calibrating and performing measurements;

  – making kinetic analysis with set measurement interval;

  – setting data into Microsoft Excel from the instrument that allows the user to program data processing algorithm.

FEATURES OF SPECTROPHOTOMETERS PE-5400VI AND PE-5400UV

- Programmable wavelength setting (using instrument keyboard or computer).
- The accuracy of the wavelength setting is 1nm.
- Automatic dark current compensation when changing the wavelength.
- The total data memory capacity is up to 200 calibration curves and 200 measurement data groups.
- The items can be delivered additionally:

  – cell holder for 6 cuvettes (EU standard, 50mm path length);

  – cell holder for 9 cuvettes (EU standard, 10mm path length).
- SC5400 is the scanning program by the wavelength delivered as an option.

SPECTROPHOTOMETER PE-5300VI

It's a budget-friendly and highly reliable instrument for routine tasks. PE-5300VI belongs to the class of instruments KFK-3, UNICO 1200 (1201), PE-6300V, but it exceeds them in a number of metrological properties and operational features.

PE-5300VI

SPECTROPHOTOMETER PE-5400VI

It is a multipurpose instrument for solution of a wide variety of tasks in visible spectrum. PE-5400VI belongs to the class of instruments KFK-3.01, UNICO 2100, UNICO 1200 (1201), PE-5400V, but it differs from them in its spread spectral range, improved metrological properties and operational features.

PE-5400VI

SPECTROPHOTOMETER PE-5400UV

It is a modification of PE-5400VI completed with UV band. The instrument has all the features of the basic model. It exceeds its analogs UNICO 2100UV, LEKI SS2107UV, SPEKOL 1300 in a number of characteristics.

PE-5400UV

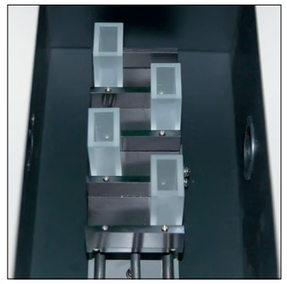
Technical data	PE-5300VI	PE-5400VI	PE-5400UV
Wavelength range, nm	325 – 1000	315 – 1000	190 – 1000
Beam	single beam		
Range of readings of spectral factors of direct transmission, %T	0.0 to 200.0		
Absorbance range, A	-0.300 to 3.000		
Absorbance accuracy, %	± 0.5	± 0.5	±0.5 (315nm to 1000nm) ±1.0 (190nm to 315nm)
Spectral interval, nm	4		
Wavelength setting	Manual	Program	
Wavelength accuracy, nm	± 2	± 1	
Wavelength repeatability, nm	<1,0	< 0,5	
Stray light at 340nm, %T	≤0.3%		
Results memory	no	up to 200 records and up to 200 calibration curves	
Number of cuvettes (RUS standard) installed in a cell holder	3	4	
Outputs	USB B		
Warming up time, min	20		
Continuous work time, hours	no less than 8		
Supply voltage/Frequency	85-250V at 50Hz		
Dimensions (D×W×H), no more than, mm	440×320×175	465×395×235	465×395×235
Weight, no more than, kg	8.5	11.5	12.5

ACCESSORIES FOR SPECTROPHOTOMETERS

Glass cuvettes "Ecros", pack of 4 cuvettes

Quartz cuvettes "Ecros" for PE-5400UV, pack of 2 cuvettes

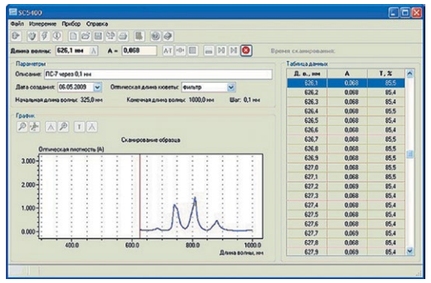
Adapter



Cell holder

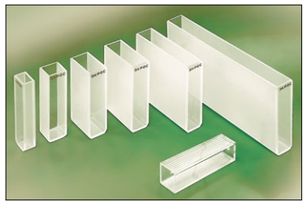
ADDITIONAL ACCESSORIES

PC software SC5400 for spectrophotometers PE-5400VI and PE-5400UV

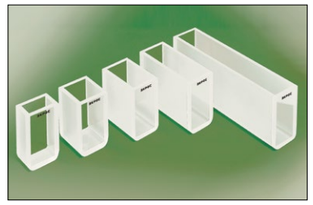


PC software SC5400 allows:

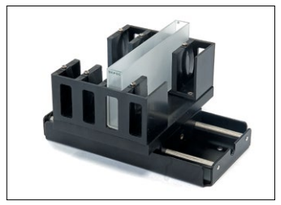
- Wavelength scanning of a sample absorbance at a given range with a given pitch (1 to 10.0 nm);
- determining peaks on the received spectrums
- saving and loading tables of peaks and the tables of scanning results
- printing reports of scanning
- observing scan process on PC screen in real-time mode



Glass and quartz cuvettes ECROS
Path length: 5 to 100mm



Glass cuvettes and quartz cuvettes ECROS (RUS standard)
Path length:5 to 100mm



Cell holder for 4 cuvettes (EU standard)

The following accessories for PE-5400VI and PE-5400UV spectrophotometers can be supplied additionally:

- cell holder for 6 cuvettes (EU standard, 50mm);
- cell holder for 9 cuvettes (EU standard, 10mm).

SET FOR COD (chemical oxygen demand) DETERMINATION

The recommended delivery complete set for COD determination:

- Spectrophotometer PE;
- Dry block heater PE-4050;
- COD vial holder;
- Certified reference material COD 7425-97 (10.0g/dm3);
- Photometric vials for COD (heat-resistant vials with screw cap, volume 10ml, outer diameter 16mm), 25 pcs.;
- Rack for COD vials;
- Stainless steel pincer 200x2.5mm

DRY BLOCK HEATER PE-4050

Operation principle: Warming up of samples in reaction vessels at fixed temperature conditions. Microprocessor control unit provides digital data display of heating parameters and stability of temperature maintenance.

Functions:

- Digital control and PID-control (proportional-integral-derivative control) of temperature;
- Heating timer;
- Delayed start timer;
- Socket for installation of socket thermometer.

Technical data	PE-4050
Heating temperature range, °C	RT +10 - 180
Temperature setting discreteness, °C	0.1
Temperature maintenance accuracy, °C	±0.2
Temperature gradient within the block volume, °C	±0.2
Power consumption, W	250
Supply voltage, V	220
Number of sockets	24
Socket dimensions, mm	17×45
Timer internal setting range (switch-controlled)	from 1 sec to 99 min 59 sec, the discreteness is 1 sec
	from 1 min to 99 hours 59 min, the discreteness is 1 min (factory setting)
	from 1 hour to 99 days 23 hours, the discreteness is 1 hour
Dimensions (W×D×H), mm	220×270×125
Weight, kg	3.9

AUTOMATIC COULOMETRIC TITRATOR FOR MOISTURE DETERMINATION BY KARL FISCHER'S METHOD PE-9210

PE-9210

Purpose: Automatic coulometric moisture titrator PE-9210 is used to measure moisture content in samples of substances based on Karl Fischer's method. The titrator can be used in laboratories of industrial installations, research institutions, control authorities, educational institutions, etc.

Application:

-Petroleum products

ISO 12937:2000 "Petroleum products. Determination of water. Coulometric Karl Fischer titration method.

-Crude oils

ASTM D4928-00(2010) "Standard Test Methods for Water in Crude Oils by Coulometric Karl Fischer Titration"

Features and Benefits:

- Adaptive operation algorithm is aimed to maintain high accuracy at titration of samples with low moisture content;
- Color touchscreen VGA 5.7";
- Graphic display of titration procedure;
- Creation and retention of the user measurement methods;
- Retention of measurement results and results of measurement statistical analysis;
- Reagent resource counting;
- RS-232C for connecting of balance;
- 2 x USB A for connecting of PC and thermal printer.

Technical specifications	PE-9210
Titration method	Karl Fischer coulometric titration
Net volume of a standard titration cell, ml	100+150
Iodine generation	Pulsing, direct current
Endpoint detection	Alternating current polarised potential
Stirring method	Magnetic rotor, 100 - 1000 rpm
Sensitivity, µg H2O	0.1
Water weight measurement range in the sample, mg	from 0.01 to 200
Relative tolerance, %	±3.0
Relative RMSD limit of uncertainty, %	1.5
Drift compensation	Automatic and manual modes
Signaling functions	Electrolysis current, titration result, retitration, anolyte life time, catholyte life time, closing or break of the indicator electrode circuit, parameter input, real time clock problem
Power supply voltage, V	100 - 240 @ 50/60 Hz
Power consumption, W, max.	170

X-RAY FLUORESCENCE SULFUR-IN-OIL ANALYZER PE-7700

EDXRF Sulfur-in-Oil Analyzer PE-7700 is a reliable XRF instrument for sulfur determination in petroleum and petroleum products such as motor fuel, naphtha, heavy oil, crude oil, etc.

PE-7700 advantages:

- Fast analysis and high accuracy
- Automatic compensation of carbon matrix effect
- Easy to use disposable sample cells
- Strong metal case assures reliable X-ray protection and long operational life
- User friendly graphic interface with touchscreen allows easy error free operation
- Noiseless thermal graphic printer
- Conforms to GLP and LIMS
- The most compact XRF Sulfur Analyzer
- PE-7700 complies with ASTM D4294 and ISO 20847

Technical specifications	PE-7700
Measuring principle:	energy-dispersive X-ray fluorescent analysis
Measuring object:	motor fuel, naphtha, heavy oil, crude oil etc.
Range:	0.0005 to 5 m/m %
C/H ratio error:	within ± 0.0050 m/m% (1 C/H), with sample containing 1 m/m % sulfur
Detection limit:	less than 0.0003 ppm
Calibration:	by optional standard solution (from 3 to 20 calibration points)
(Optional):	Instrumental drift correction with Setting-Up samples (SUSs)
Sample cell:	disposable, sealed container
Amount of sample:	5-18 ml
Measurement time:	10 to 600 seconds, selectable
Operating temperature:	16 to 35°C @ up to 80% RH
X-ray excitation:	low power X-ray tube Spectrum measurement capability
Data output:	measurement, calibration and spectrum data via RS-232C
X-ray detector:	high resolution, gas-filled proportional counter
Power supply:	90-240 V, 50-60 Hz
Power consumption:	50 VA
Dimensions (WDH):	245x360x130 mm
Weight:	6.5 kg

MOTOR FUEL FILTERING FACTOR TESTER UOFT-01

The instrument shall be used to test the filtering factor of motor fuels.

Scope of delivery:

graduated glass tube cut from a burette 1-2-50-0.1 in a metal mount, and an extension made of Caprolon in its top - 1pc; glass or metal cock in a mount of a filtering device - 1pc; filter mount - 1 pc; filter seat - 1 pc; gasket 1x17x19 - 2 pcs; gasket 1x15x17 - 2pcs; filter paper, BFDT brand, with screening fineness not exceeding 3μm, (0.33+/-0.03) mm thickness, the number of analyses - 3 pcs; volumetric flask 1-50-2, 50cm3 - 1 pc; beaker V or N, version 1 or 2, 400 or 600 cm3 capacity (made of glass or polypropylene) - 1 pc; cylinder 1-50 or 3-50 - 1 pc; operating manual - 1 pc; storage case - 1 pc.

The following items can be ordered additionally:

filter paper BFDT 17mm (1 pack contains 50 filter papers); rack PE-2700

POUR & CLOUD POINT TESTER PE-7200

PE-7200I

PE-7200A

Purpose: determination of pour and cloud point of motor fuels.

PE-7200 operation principle is based on transmission capacity measurement of motor fuels gradually cooling the temperature of a sample.

Maximum cooling temperature of a sample depends on ambient temperature and can be not below - 52°C at ambient temperature +20°C

The tester is produced in 2 modifications:

PE-7200A – model with embedded computer;

PE-7200I – model with the possibility of information output on internal LCD display or connected PC.

Technical characteristics	PE-7200
Types of tested fuel	all brands motor fuel
Accuracy of cloud point determination, °C	±1.0
Accuracy of pour point determination, °C	±2.0
Accuracy of temperature measurement, °C	0.2
Measurement time, min	up to 20
Power supply, V/Hz	220-250/50
Power consumption, W, not more than	300

PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER PE-TVZ

Purpose: The flash point tester PE-TVZ is intended for usage as laboratory equipment to perform closed cup flash point determination of oil products according to method B EN ISO 2719: 2002 and ASTM D93 are considered for oil products testing.

Principle of the tester PE-TVZ operation is that the cup with analyzed sample is heated with specified speed and the burned flame is set to the sample at temperature intervals which are prescribed by the Standard. The lowest temperature at which vapors of investigated material inflame is determined as flash point.

Technical specifications	PE-TVZ
Maximum heating temperature, °C	up to 370
Ignition device, type	oil (gas type - upon request)
Power supply voltage from AC mains with frequency of 50Hz, V	220±22
Power consumption, W, no higher than	400
Air temperature, °C	-15÷35
Relative humidity, %	-30÷90
Overall dimensions (D x W x H), mm	307×255×153
Weight, kg	5

Scope of delivery:

the closed cup flash point tester PE-TVZ complete with cup and cover - 1pc; power cable - 1pc; thermometer - 1pc; data sheet/operating manual - 1pc; wick for ignition device - 1 set; wire loop for wick charging - 1pc; oil for ignition device - 30 ml.

CLEVELAND OPEN CUP FLASH POINT TESTER PE-TVO

The tester PE-TVO is intended for usage as laboratory equipment to perform open cup flash point determination of oil products according to method A ASTM D92.

Principle of the tester PE-TVZ operation is that the cup with analyzed sample is heated with specified speed and the burned flame is set to the sample at temperature intervals which are prescribed by the Standard. The lowest temperature at which vapors of investigated material inflame is determined as flash point.

Technical specifications	PE-TVO
Maximum heating temperature, °C	up to 370
Ignition device, type	Gas
Power supply voltage from AC mains with frequency of 50Hz, V	220±22
Power consumption, W, no higher than	400
Air temperature, °C	-15:35
Relative humidity, %	-30:90
Range of flash temperature determination, °C	25 – 370
Overall dimensions (D x W x H), mm	307×255×153
Weight, kg	5

Scope of delivery:

the open cup flash point tester PE-TVO complete with cups - 1pc; thermometer - 1pc; template for flame adjustment - 1pc; data sheet/operating manual - 1pc.

OCTANE NUMBER METER PE-7300

Range of application:

- testing laboratories of the petroleum refineries and petroleum storage depots for the control of stability of technological processes;
- agencies carrying out petroleum products quality audit for conformity to requirement of national standard;
- research laboratories

Octane number tester is intended for determination of Research Octane Number (RON) and Motor Octane Number (MON) of automobile petrol and cetane number of diesel fuels during the operational check over field and laboratory conditions.

Technical capabilities:

- The operation principle is based on comparison of dielectric properties of petrol (diesel fuel) with reference values stored in computer database taking into account the temperature correction.
- The Octane meter can be connected to a PC via USB interface for further data processing.

Technical specifications	PE-7300
Types of controllable fuel	Automobile petrol and Diesel fuel
Octane number range	66:98
Cetane number range	30:70
Measurement time, no more than, sec	10
Power supply	battery model 6F22, voltage 9V adapter DC 12V/25mA
Continuous running time, hours	10
Operation conditions (ambient temperature, °C)	-10:+35
Overall dimensions (electronic block), D x W x H, mm	76×210×23
Overall dimensions (sensor), Ш x H, mm	48×110
Total weight, kg	1.2

Delivery set:

electronic block - 1pc, sensor - 1pc, power adapter - 1pc, beaker 100 ml - 1pc, case - 1pc, magnet - 1pc, technical passport - 1pc.

INSTRUMENTS AND EQUIPMENT

LABORATORY SET №2M6U (SET FOR EXPRESS ANALYSIS OF PETROLEUM PRODUCTS QUALITY)

Portable laboratory for sample taking and on-line acceptance analysis of fuel with standard and express methods.

Technical capabilities of the laboratory set:

- Determination of octane number by motor and research methods;
- Determination of cetane number;
- Determination of lead content in motor fuels;
- Oil products density detection;
- Determination of mechanical impurities;
- Water;
- Motor fuels color detection;
- Content determination of heavy hydrocarbons;
- Water-soluble acids and caustic;
- Phenolic in motor fuels;
- Acid electrolyte density;
- Determination of liquid coolant content and freezing temperature by its density;
- Quantitative determination of water in tank (tank-truck, tank wagon);
- Oil product bottom sampling from tanks, and determination of settling water, and mechanical impurities;
- Determination of water content in anti-crystallization additives;
- Determination of anti-crystallization liquid in jet engines fuels

Scope of supply:

octane meter PE-7300 – 1 pc; sample collecting device – 1 pc; set of areometers ANT-2 and AON-1; indicator tubes; water indicator paste; laboratory ware and materials for fuel express analysis.

COOLING BATH FOR PARAFFIN DETERMINATION IN CRUDE OIL

The cooling bath is made of stainless steel.

Metal housing is coated with chemically resistant powder paint. Special insert for flask fastening protects flask spout from brake.

Standard complete set:

cooling bath - 1 pc, bath cover - 1 pc, support stands - 4 pcs, drain tap - 1 pc, tool for thermometer installation - 1 pc, rubber stoppers with hole - 4 pcs, tubes - 2 pcs, heat recovery unit - 1 pc.

! Refrigerated circulator is not included in the standard set. It is ordered separately.

Technical specifications	Cooling bath for paraffin content determination in crude oil
Filtration funnels	2
Dimensions (L x W x H), mm	280×180×100
Height of support stands, mm	220

PORTABLE SAMPLER FOR PETROLEUM AND PETROLEUM PRODUCTS PE-1650

PE-1650

Purpose: sampling of light crude oil, light petroleum products and specialty liquids from tankers.

Scope of supply:

sampler - 1pc (version A or B), metal reinforcing cable - 1pc.

Technical specifications	PE-1650
Sample volume, ml	500 (750) (GOST P 51476-99)
Depth for taking a sample, m: version A; version B	from 0 to 5 from 0 to 10
Entry-hole diameter, mm	18 (20)
Sampler material	steel
Overall dimensions (Ø×H), mm	88×250 (300)
Weight, kg	1.1

PORTABLE SAMPLERS FOR PETROLEUM AND PETROLEUM PRODUCTS PE-1620, 1630, 1640, 1660

PE-1620U PE-1620 PE-1630

Purpose: sampling of petroleum and petroleum products. Used for quality control of petroleum products. The samplers are designed and manufactured according to ASTM D4057-95 (2000) "Standard practice for manual sampling of petroleum and petroleum products"

PE-1620 sampler is recommended for sampling of petroleum and petroleum products, tankers sampling with 5m depth.

PE-1620U sampler is intended for sampling, density and temperature measurements of petroleum products and specialty liquids from gas station tanks, tankers and stationary tanks.

PE-1630 sampler is intended for petrol, diesel fuel, naphtha from tankers.

PE-1640 sampler is intended for sampling of petroleum products for measurement of vapor pressure of petroleum products according to GOST 1756-2000 out of tankers and stationary tanks.

PE-1660 sampler is intended for sampling of heavy crude oil, naphtha residual, viscous lubricators from tankers and stationary tanks.

Scope of delivery:

sampler version A or B - 1pc, metal reinforcing cable - 1pc, earth terminal - 1pc.

Technical specifications	PE-1620	PE-1620U	PE-1630	PE-1640	PE-1660
Sample volume, ml	250	250	850	750-1000	850
Depth for taking a sample, m	from 0 to 5		Version A - from 0 to 5 Version B - from 0 to 10		
Sampler material	steel				
Overall dimensions (Ø×H), mm	55×180	38×250	75×250	75×300	75×250
Weight, kg	1.3	0.6	1.7	1.9	1.7

OIL SAMPLER PE-1600, PE-1610

Purpose: sampling of petroleum and petroleum products from transport tanks and stationary tanks with depth up to 5m.

Recommendations:

- PE-1610 is recommended for sampling of crude oil and lubricants oil.
- PE-1600 is intended for petrol, diesel fuel, naphtha.

PE-1610 PE-1600

Scope of delivery:

sampler - 1pc, brass chain (12m)

Technical specifications	PE-1600	PE-1610
Sample volume, ml	880	880
Sampling depth, m	from 0 to 5	from 0 to 5
Sampler material	brass	brass
Overall dimensions (Ø×H), mm	80x282	80x287
Weight, kg	2.69	2.68
Weight of brass chain (12m)	1.05	1.05

WATER SAMPLERS PE-1110, PE-1220

Purpose: sampling of environmental and waste waters from wells, natural and artificial reservoirs including ice-coated water bodies.

PE-1110 is used for sampling followed by determination of ultra-low concentration of pollution agents content.

PE-1220 is used for sampling followed by determination of petroleum products and pollution agents in environmental and waste waters.

PE-1110 PE-1220

Scope of supply:

sampler - 1pc, synthetic rope - 1pc, PE bottle - 1pc, glass bottle - 1pc, adapter ring for PE bottle - 1pc, adapter ring for glass bottle - 1pc.

Technical specifications	PE-1110	PE-1220
Sample volume, ml	1000	
Water pond depth, m	0.3	0.5
Sampling depth, m	0.3-2.0	0.4-3.0
Type of sampling vessel	PE bottle and glass bottle	
Sampling vessel volume, ml	1000	
Sampler material	fluoroplastic/ UHMWPE, stainless steel	
Sampler hanging way	synthetic rope, diameter 6mm	
Minimum diameter of hole in ice, mm	110	
Overall dimensions (Ø×H) without bottle/with bottle, mm	98/98 x 186/426	98/98 x 386/626
Weight (without bottle/with bottle), kg	2.7/3.3	3.7/4.3

DRYING OVENS PE-4610, PE-4610M, PE-4630M, PE-4620M, ES-4610, ES-4620

PE-4630M PE-4620M PE-4610M PE-4610 ES-4610, ES-4620

The drying oven is to be used for drying, firing, melting, curing and sterilization of various articles, treatment of tools and samples as well as performance of laboratory investigations of every sort and kind in the laboratories of industrial enterprises, research establishments and medical institutions, colleges, universities, etc.

The following functions are implemented in the instruments:

- Fast and uniform heating of the chamber;
- Digital PID-controller (Drying Ovens ES);
- Digital intelligent PID-controller with fuzzy logic (Drying Ovens PE);
- Maintenance of the specified temperature with the required accuracy;
- Stainless steel chamber;
- Half-glass door with triple tinted glass (Drying Ovens ES);
- Setting the timer to stop the heating;
- Adjustable fan speed (PE-4610);
- Overheating protection with the operation alarm;
- Possibility to install additional shelves.

Technical specifications	PE-4610	PE-4610M	PE-4630M	PE-4620M	ES-4610	ES-4620
Chamber volume, l	64	56	113	25	46.5	30
Working temperature range, °C	from ambient +5 to 300	from ambient +50 to 300			from ambient +10 to 300	
Temperature non-uniformity throughout the volume, °C	± 1	± 2.5			± 5	
Temperature setting discreteness, °C	0.1	1			0.1	
Maximum timer setting, min	5999	–			9999	
Timer setting discreteness, min	1	–			1	
Standard/maximum number of shelves, pcs	2/8	3/5	2/7	2/3	2/5	
Power consumption, W	1600		2500	1500	1100	850
Internal dimensions, mm	400×360×450	390×350×410	550×500×410	280×300×300	420×395×350	340×320×320
External dimensions, mm	550×550×840	755×660×630	810×890×660	510×670×480	720×590×520	620×530×490
Weight, kg. no more than	61	50	72	37	36	32

MUFFLE FURNACE PE-4820

PE-4820

The muffle furnace is intended for using in laboratories, industrial and mining enterprises as well as research and development institutes to perform the element analysis as well as to quench, anneal and temper ordinary – and small- size steel parts and to perform other heat – treatment operations.

Features:

- Medium temperature muffle furnace with ceramic fiber lining which provides flash heat and low power consumption.
- Heating elements are fixed in walls of working chamber which protects them from splashes. Thus it helps to increase service life of the muffle furnace.

Technical specifications	PE-4820
Chamber volume, l	7.2
Working temperature range, °C	50:1000
Temperature setting discreteness, °C	±1
Temperature uniformity throughout the volume, °C	±5
Timer setting range, s	1:9.999
Chamber dimensions, mm	300x200x120
Power consumption, W Power consumption, kW	2.5
Overall dimensions (W x D x H), mm	700x570x600
Weight, kg	70

WATER BATHS PE-4300, PE-4310, PE-4312

The water bath is intended to handle a wide range of laboratory procedures for industrial, biological and scientific research. The instrument is designed for accurate temperature control between ambient +5°C up to 100°C.

Advantages:

- instrument body is covered with powder paint resistant to mechanical and chemical impact
- made of high-quality stainless steel
- electromechanic protection from overtemperature

PE-4310, PE-4312

PE-4300

Technical characteristics	PE-4300 (6-position)	PE-4310 (30L)	PE-4312 (11L)
Heat carrier	water or glycerine-water mixture		
Temperature range, °C	Ambient +5 - 100		
Temperature setting discreteness, °C	0.1		
Temperature maintenance, °C	±0.1	±0.2	
Temperature uniformity, °C	±1	±0.5	
Number of slots	6	–	
Max. diameter of slot, mm	110	–	
Bath volume, l	23.7	28.5	10.8
Inner dimensions, mm	490×322×150	500×300×190	300×240×150
Outer dimensions, mm	770×390×270	560×380×320	360×320×255
Weight, kg	18	13	8
Power consumption, W	3000	2000	1000
Supply voltage, V	220±20		

DRY BLOCK HEATERS PE-4010, PE-4020, PE-4030, PE-4050

PE-4030

PE-4020

The dry block heater is intended for heating the samples in reaction vessels (10 ml) at fixed temperature regime under laboratory conditions.

Features:

- Setting the timer for switching on the heating after expiration of the specified time (delayed start);
- Setting the timer for switching off the heating after expiration of the specified time;
- Saving the current temperature and timer settings in the non-volatile memory;
- Audible and visible signalling of the completion of the heating cycle;
- Safety functions;
- Socket for mounting the control thermometer;
- Possibility of replacement of the aluminium block for another configuration of vessels

Scope of delivery:

dry block heater - 1pc; removable handle for moving the block - 1pc; mains cable - 1pc; data sheet and operating manual - 1pc

Technical specifications	PE-4010	PE-4020	PE-4030	PE-4050
Working temperature range, °C	Ambient +10 - 180			
Temperature setting discreteness, °C	0.1			
Temperature maintenance accuracy, °C	±0.2			
Temperature gradient within the block volume, °C	±0.2			
Power consumption, W	350		250	
Supply voltage, V	220			
Number of sockets, pcs	22	14	14	24
Socket dimensions (ШхD), mm	18×85	21.5x85	23×45	17×45
Range of timer span adjustment (switched)	from 1 s to 99 min 59 s, the discreteness is 1 s			
	from 1 min to 99 hours 59 min, the discreteness is 1 min (factory setting)			
	from 1 hour to 99 days 23 hours, the discreteness is 1 hour			
Dimensions (W×D×H), mm	220×275×160		220×275×125	
Weight, kg, no more	4.5		3.9	

HEATING MANTLES PE-4100(M), PE-4110(M), PE-4120(M), PE-4130(M)

Features:

- Heating element is placed into safe fiberglass which excludes permanent deformation and avoid heat losses;
- Two-zone heating with the possibility of switching off the heating of the top zone.

Analog heating mantles:

- The heating mantle is equipped with electronic temperature controller;
- Automatic break of the device in case of overheating (the operation returns to normal when the temperature reaches allowable limit).

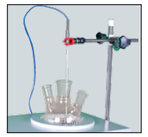
Digital heating mantles:

- Indication of parameters on LCD;
- Electronic (PID) temperature controller;
- Automatic and manual tuning of the heating intensity;
- Timer with visual and audible signalling of finishing of the heating;
- Locking of the control to provide the protection against accidental change of the operation mode;
- Possibility of connection of a remote sensor (option);
- Determination and indication of the possible faults and malfunctions.

Purpose: the heating mantle is intended for heating liquids in round-bottomed flasks made of heat-resistant glass with the volume of 250, 500, 1000 and 2000 ml within the temperature range from the ambient one to 450°C.

PE-4110M
analog

PE-4120
digital



Temperature sensor

Technical specifications	PE-4100(M)	PE-4110(M)	PE-4120(M)	PE-4130(M)
Flask volume, ml	500	1000	250	2000
Maximum heater temperature, °C	450			
Housing material	steel covered with chemical-resistant powder paint			
Material of heating element	fabric fibre glass with a nichrome wire			
Power consumption, W	230	330	150	470
Supply voltage, V	220 ± 10 %			
analog heating mantles				
Dimensions (W x D x H), mm	220×325×120	220×345×130	220×325×120	220×345×130
Weight, kg	3.3	3.7	3.2	3.8
digital				
Dimensions (W x D x H), mm	220×310×120	220×330×130	220×310×120	220×330×130
Weight, kg	3.4	3.7	3.3	3.8

HEATING MANTLES ES-4100, ES-4110, ES-4120, ES-4130

Purpose: the heating mantle is intended for heating liquids in round-bottomed flasks made if heat-resistant glass with the volume of 250, 500, 1000 and 2000 ml within the temperature range from the ambient one to 450°C.

Features:

- Heating element is placed into safe fiberglass which excludes permanent deformation and avoid heat losses.

ES-4110

Technical specifications	ES-4100	ES-4110	ES-4120	ES-4130
Flask volume, ml	500	1000	250	2000
Maximum heater temperature, °C	450			
Housing material	steel covered with chemically resistant powder paint			
Material of heating element	woven fiber glass with a nichrome wire			
Power consumption, W	230	330	140	450
Supply voltage, V	220 ± 10 %			
Overall dimensions (Ø×H), mm	200×150	240×165	170×135	280×180
Weight, kg	1.6	2.2	1.4	3.5

FABRIC HEATING MANTLES ESF-41XX AND ESF-4110S/BEAKER HEATERS ESB-41XX

ES-2100

ESF-4120 ESB-4110

ESF-4110S

Purpose: the heating mantle is intended for heating liquids in round-bottomed flasks made of heat-resistant glass with the volume of 100, 250, 500, 1000, 2000 ml within the temperature range from the ambient one to 450°C

Features:

- Heating element is placed into safe fiberglass which excludes permanent deformation and avoid heat losses;
- It is possible to use magnetic stirrer along with heating of flasks and beakers (a heating mantle is placed on the magnetic stirrer);
- It is recommended to use temperature controller ES-2100 along with the heating mantles. Temperature controller is not included in the standard equipment (you can order it additionally);
- ESF/ESB heating mantles are made of woven glass fabric so it cannot be damaged even if it falls from a table height.

Technical specifications	ESF-4100	ESF-4110, ESB-4110	ESF-4120, ESB-4120	ESF-4130	ESF-4140	ESF-4110S
Flask/beaker volume, ml	500	1000	250	2000	100	1000
Maximum temperature of heating element, °C	450					400
Housing material	E-Glass reinforced fabric coated with silicone					
Heating element	fiber glass with a nichrome wire					
Power consumption, W	230	330	150	470	85	520
Supply voltage, V	220 ± 10 %					
Dimensions, mm	170×85	205×95/190×125	145×75/130×80	235×120	115×55	210x210x180
Weight, kg, no more than	1	1.3	0.9	1.5	0.7	1.4

3-POSITION HEATING MANTLES PE-4100-3, ES-4100-3, ES-4110-3

Features:

- Heating element is placed into safe fiberglass which excludes permanent deformation and avoid heat losses;
- Each heating element can be controlled independently

Features of heating mantles PE:

- Two-zone heating element;
- Possibility of switching off the heating of the top zone;
- Indication of parameters on LCD;
- Electronic (PID) temperature controller;
- Automatic and manual tuning of the heating intensity;
- Timer with visual and audible signalling of finishing of the heating;
- Locking of the control to provide the protection against accidental change of the operation mode;
- Possibility of connection of a remote sensor (option);
- Determination and indication of the possible faults and malfunctions;
- Set with racks is included in the standard equipment;
- Clamps for racks can be ordered additionally.

ES-4110-3

PE-4100-3

Technical specifications	PE-4100-3	ES-4100-3	ES-4110-3
Flask volume, ml	500	500	1000
Maximum heater temperature, °C	450		
Housing material	steel covered with chemically resistant powder paint		
Material of heating element	woven fiber glass with a nichrome wire		
Power consumption, W	690 (230×3)		990 (330×3)
Supply voltage, V	220 ± 10 %		
Overall dimensions, mm	610×310×120	600×400×140	670×400×140
Weight, kg	8.4	11.6	12.6

HOT PLATES
ES-H, ES-HA, ES-HF, ES-HS

ES-H (CERAMIC COATING)

Purpose: hot plate is intended for fast and uniform heating of beakers, flasks and other vessels.

Features:

- Ceramic plate is excellently resistant to acid, bases and solvents (except fluohydric acid);
- Digital display for precise temperature setting;
- Quality-price ratio.

ES-H 3040

Technical specifications	ES-H3040	ES-H4040	ES-H3060
Heating plate dimensions, mm	300×400	400×400	300×600
Temperature range, °C	from ambient +5 - 320		
Housing material	steel covered with chemical-resistant powder paint		
Heating plate material	aluminum alloy covered with ceramics		
Temperature setting accuracy, °C	± 0.1		
Temperature non-uniformity along heating plate, °C	± 0.5		
Continuous work time, hours	164		
Power consumption, W	1800	2000	2600
Supply voltage, V	220 ± 10 %		
Overall dimensions, mm	420×390×165	420×490×165	620×390×165
Weight, kg	11.0	13.5	15.5

SERIES ES-HA (STAINLESS STEEL)

Features:

- Hot plates are produced in two models: ES-HA3040 (with built-in control board) and ES-HA4060 (with remote control board). Hot plate with the remote control board allows adjusting temperature distantly ;
- Digital display for precise temperature setting;
- Heating plate is moderately resistant to acid, bases and solvents (except fluohydric acid).

ES-HA3040

ES-HA4060

Technical specifications	ES-HA3040	ES-HA4060
Heating plate dimensions, mm	300×400	400×600
Form factor	built-in control board	remote control board
Temperature range, °C	from ambient +5 - 350	
Housing material	steel covered with chemically resistant powder paint	
Heating plate material	aluminum alloy covered with ceramics	
Temperature setting accuracy, °C	± 1	
Temperature non-uniformity along heating plate, °C	± 5	
Continuous work time, hours	8	
Power consumption, W	2000	3000
Supply voltage, V	220 ± 10 %	
Overall dimensions, mm	375×270×150	610×410×150 (hot plate) 155×215×110 (control board)
Weight, kg	17	30

HOT PLATES
ES-H, ES-HA, ES-HF, ES-HS

ES-HF 3040

ES-HF 4060

ES-HF (TEFLON COATING)

Features:

- Hot plates are produced in two models: ES-HF3040 (with built-in control board) and ES-HF4060 (with remote control board). Hot plate with the remote control board allows adjusting temperature distantly;
- Digital display for precise temperature setting;
- Heating plate is moderately resistant to acid, bases and solvents (except fluohydric acid).

Technical specifications	ES-HF3040	ES-HF4060
Heating plate dimensions, mm	300×400	400×600
Form factor	built-in control unit	remote control unit
Temperature range, °C	from ambient +5 - 210	
Housing material	steel covered with chemically resistant powder paint	
Heating plate material	aluminum alloy covered with ceramics	
Temperature setting accuracy, °C	± 1	
Temperature non-uniformity along heating plate, °C	± 5	
Continuous work time, hours	8	
Power consumption, W	2000	3000
Supply voltage, V	220 ± 10 %	
Overall dimensions, mm	375×270×150	610×410×150 (control board) 155×215×110 (control board)
Weight, kg	17	30

ES-HS 3030M

ES-HS (ALUMINIUM)

Features:

- Simple and user friendly instruments with manual control of heater capacity;
- Aluminium plate ensures high uniform heating;
- High heating rate due to powerful heating element;
- Stepless power control;
- Reasonable price.

Technical specifications	ES-HS3030M	ES-HS3545M	ES-HS4040M	ES-HS3560M	ES-HS4060M
Heating plate dimensions, mm	300×300	350×450	400×400	350×600	400×600
Temperature range, °C	from ambient +5 - 350				
Housing material	steel covered with chemically resistant powder paint				
Heating plate material	aluminium				
Power consumption, W	1200	1800	2000	2800	3000
Supply voltage, V	220 ± 10 %				
Overall dimensions, mm	300×300×180	350×450×180	400×400×180	350×600×180	400×600×180
Weight, kg	6.2	8.4	8.5	11	12

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ONE-POSITION MAGNETIC STIRRERS PE-6100, PE-6110

The magnetic stirrer shall be used for stirring of liquids with the help of magnetic stirring bar. The stirrer can be used for preparation of samples and implementation of analyses.

Features:

- The instrument is made as a single unit which provides stirring of reagents at the set of constant rotation speed of the magnetic stirring bar which is placed in a vessel with liquid;
- Stirrer housing is made of PP;
- Teflon stirring bar (7 x 26mm);
- PE-6110 - magnetic stirrer with heating.

Scope of delivery:

magnetic stirrer - 1pc, stirring bar - 2pcs.

PE-6100

Stirring bar for magnetic stirrer

PE-6110

Technical specifications	PE-6100	PE-6110
Maximum stirring volume, ml	1000	1000
Temperature range, °C	–	120
Speed range, rpm	200 – 2000	200 – 2000
Heater power, W	–	40
Supply voltage, V	220	220
Overall dimensions (Ø×H), mm	105×50	105×50
Weight, kg	0.3	0.4

MULTIPOSITION MAGNETIC STIRRER PE-6600

Purpose: stirring of liquids in several vessels (up to 9 vessels) at the same time by means of a stirring bar rotating in variable magnetic field. It considerably simplifies the working procedure when a lot of analyses are made.

Features:

- The instrument case is made of duralumin.
- Ferrite stirring bars are coated with HDP.
- The cyclic operation can be up to 12 hours with 1-hour break.

Scope of delivery:

magnetic stirrer - 1pc, stirring bars - 9pcs.

Technical specifications	PE-6600
Operational mode	continuous
Total weight of vessels with liquids installed on a stirrer, kg, no more than	10
Stirring bar speed range, rpm	200 – 800
Power consumption, W	20
Supply voltage, V	220
Overall dimensions (Ø×H), mm	375 x 270 x 54
Weight, kg	7.5

Number of stirring positions:

Vessel volume, mm	Number, pcs
5000	1
1000	4
400	5
150	9

MAGNETIC STIRRER WITH HEATING ES-6120

ES-6120

Purpose: the magnetic stirrer shall be used to stir and heat non-viscous liquids in flat-bottomed containers with the capacity up to 2 l.

Features:

- Heating and stirring functions can be used either at the same time or individually;
- Ceramic coating of the heating plate is resistant to longterm contact with acids and alkalis.

Scope of delivery:

magnetic stirrer - 1pc, stirring bar - 2pcs.

Technical specifications	ES-6120
Maximum stirring volume, ml	2000
Operating temperature range, °C	from ambient up to 320
Rotation speed, rpm	100 – 1700
Heating plate dimensions, mm	180×180
Power consumption, W	550
Power supply voltage/frequency, V/Hz	220 – 230, 50/60 Гц
Overall dimensions, mm	205× 220 ×110
Weight, kg	2.8

OVERHEAD STIRRERS
PE-8100, PE-8300, PE-8310, ES-8300, ES-8300D, ES-8400

Purpose: Overhead stirrers are intended for stirring a fluid of various viscosity (from low to high viscosities), liquids and solid bodies, liquids and bulk solids.

Features:

- Built-in control board;
- LCD display;
- Ability to maintain the set rotation speed when changing viscosity of the stirred substance (overhead stirrers PE, ES-8300D);
- Overpower protection of rotors (PE overhead stirrers).

PE-8100

PE-8310

Scope of delivery:

PE-8300, ES-8300, ES-8300D - overhead stirrer - 1pc, propeller stirrer IM2 - 1pc.

PE-8100 - overhead stirrer - 1pc, rack ES-2730 - 1pc, propeller stirrer IM2 - 1pc, holding ring - 1pc, key for unit fastening on the stand rod - 1pc, key for fastening of holding ring on the stand rod - 1pc - 1pc.

PE-8310 - overhead stirrer - 1pc, rack PE-2730 - 1pc, propeller stirrer IM2 - 1pc, holding ring - 1pc, key for unit fastening on the stand rod - 1pc, key for fastening of holding ring on the stand rod - 1pc - 1pc, 2-finger grip (for flasks) - 2 pcs, 3-finger grips (for flasks) - 2 pcs, clamp for grips - 4 pcs

ES-8400 - overhead stirrer - 1pc, propeller stirrer IM4 - 1pc.

Solution data	Viscosity, mPa/s
Water	1.0
Liquid adhesives and fluid paints	70-500
Many kinds of paint and enamel	500-3000
Thick paints	3000-30000
Thick glue (for parquet or linoleum)	30000-50000
Sealer compounds	50000-100000

PE-8300

ES-8300 D

ES-8300

ES-8400

Technical specifications	PE-8100	PE-8300	PE-8310	ES-8300	ES-8300D	ES-8400
Maximum stirring quantity, l	0.25-20.0			0.25 – 10.0		0.25 – 40.0
Speed range, rpm	100 – 3000					50 – 1000
Maximum diameter of stirrer shaft, mm	8(10)[1]					
Maximum length of stirrer shaft, mm	Unlimited					
Maximum viscosity, mPas	50 000			10 000		100 000
Maximum torque at stirrer shaft, Ncm	60			30		200
Type of display	LCD			N/A	LED	N/A
Type of rack in the scope of delivery	with one stand rod	additional order	with three stand rods	additional order		
Overall dimensions, mm	420×380×600	100×190×255	420×380×800	155×350×230		140×400×170
Weight, kg	8.0	4.4	12.0	2.8	3.8	3.1
Power consumption, W	100			50		
Supply voltage, V	220 ± 10 %					

ACCESSORIES FOR STIRRING DEVICES

fastening clamps

adapter TS-2

holding ring

Rack
ES-2720

- rack ES-2720;
- rack ES-2730;
- fastening clamps;
- 2-finger grips;
- 3-finger grips;
- holding ring;
- adapter TS-2;
- stirrers IM2-IM14.

2-finger grips

3-finger grips

Rack PE-2730

Technical specifications	ES-2720	PE-2730
Base dimensions, mm	420×380×120	420×380×90
Base material	steel covered with powder paint	
Main stand rod diameter, mm	22	
Main stand rod length, mm	800	
Number of additional stand rods (standard equipment), pcs	–	2
Maximum number of additional stand rods, pcs	–	10
Weight of rack (standard equipment), kg	3.5	6.5

ACCESSORIES FOR OVERHEAD STIRRERS (ES)

Propeller stirrers IM2, IM4, IM5:

Propeller stirrers are used for stirring liquids of viscosity no more than 2-10 cPs (water viscosity - 1 cPs), for dilution, slurrying, fast stirring, conduction of chemical reactions in liquid medium, making of low-viscosity liquids and for high volume liquid blending.

Dissolver stirrer IM3:

The stirrer provides radial flows for stirring from the top and the bottom while creating high turbulence and shearing force for particle reduction.

Paddle stirrer IM7:

The stirrer has a semicircular form. It can perfectly be used with convex bottom vessels (round-bottom flasks). The paddle stirrer is used more efficiently for stirring of liquids with viscosity of no more than 1000 cPs.

Centrifugal stirrers IM 6, IM 8:

Two-bladed stirrer is perfect for stirring in round vessels with narrow necks. The effect is similar to a 4-bladed propeller stirrer.

Turbine stirrer IM 9:

Turbine stirrers provide efficient stirring without splashes. It is used for extraction of petroleum products out of water.

Paddle stirrer with holes IM14:

Paddle stirrers are used for stirring of low-viscosity liquids (viscosity less than 50 cPs). It is used for chloride extraction out of oil.

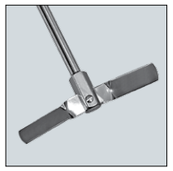
Stirrers:


IM 2


IM 3


IM 4


IM 5


IM 6


IM 7


IM 8


IM 9


IM 14

Technical specifications	IM 2	IM 3	IM 4	IM 5	IM 6	IM 7	IM 8	IM 9	IM 14
Stirrer shaft diameter, mm	8								6
Stirrer length, mm	350 или 450		450						
Paddle length, mm	25	30	45	35	50	45	40	∅ 20	30×32
Material	stainless steel						stainless steel and PTFE	stainless steel and PTFE	stainless steel

EXTRACTORS PE-8000, ES-8000, ES-8000D


Extractor ES-8000


Extractor ES-8000D

Purpose: extraction concentrating of heavy metals, petroleum and polyaromatic hydrocarbons, chlororganic compounds and other pollution agents out of water samples using any organic solvents in separating funnels, roundbottomed and flat-bottomed flasks. Turbine stirrer provides high-speed radial liquid flows to ensure effective stirring and uniform distribution of extraction agent throughout the sample volume.

Features:

- Built-in control board;
- Possibility to use the extractor as an overhead stirrer using additional stirrers IM2-IM14.

Models of extractors:

- ES-8000 – without display;
- ES-8000D – has LED display showing only rotary speed;
- PE-8000 – has LCD display showing operation mode, rotary speed and time left. PE-8000 has motor over-load protection and memorized settings function.


Extractor PE-8000


IM 9

Scope of delivery:

overhead stirrer - 1pc, rack ES-2720 - 1pc, turbine stirrer IM9 - 1pc, holding ring - 1pc, stirrer fastening clamp - 1pc, holding ring fastening clamp - 1pc, sealing unit TS-2 - 1pc, separating funnel - 1 pc.

Technical specifications	PE-8000	ES-8000D	ES-8000
Maximum stirring quantity, ml	1.0		
Speed range, rpm	100 – 3000		
Stirrer material	Fluoroplastic and stainless steel		
Display	LCD	LED	–
Timer	+	–	
Overall dimensions, mm	420×380×800		
Weight, kg	9.0	8.5	7.5
Power consumption, W	100	50	
Supply voltage, V	220±10%		

EXTRACTORS PE-8110, ES-8110, ES-8110D

Purpose: extraction of chloride salt out of crude oil using water according to GOST 21534-76.

Features:

- Built-in control board;
- Possibility to use the extractor as an overhead stirrer using additional stirrers IM2-IM14.

Difference of extractors:

- ES-8110 - without display;
- ES-8110D - has LED display showing only rotary speed;
- PE-8110 - has LCD display showing operation mode, rotary speed and time left. PE-8110 has motor over-load protection and memorized settings function.

Scope of delivery:

overhead stirrer - 1pc, rack ES-2720 - 1pc, turbine stirrer IM14 - 1pc, holding ring - 1pc, stirrer fastening clamp - 1pc, holding ring fastening clamp - 1pc, sealing unit TS-3 - 1pc, separating funnel - 2 pcs.

Extractor ES-8110

PE-8110

Extractor ES-8110D

IM 14

Technical specifications	PE-8110	ES-8110D	ES-8110
Maximum stirring quantity, ml	0,5		
Speed range, rpm	100 – 3000		
Stirrer material	stainless steel		
Display	LCD	LED	–
Availability of timer	+	–	
Overall dimensions, mm	420×380×800		
Weight, kg	9.0	8.5	7.5
Power consumption, W	100	50	
Supply voltage, V	220±10%		

SHAKERS PE-6410, PE-6300, PE-6500

Purpose: mixing and shaking of liquids in vessels with volume 100 - 1000ml.

Features:

- Shaker PE-6410 with heating;
- Shaker PE-6300 with heating;
- Shaker PE-6500 without heating.

PE-6500

PE-6300

PE-6410

Technical specifications	PE-6410	PE-6300	PE-6500
Type of movement	rotating	rotating	rocking
Speed range, rpm	40-250	0-250	2-350
Maximum platform movement, mm	20	10	10
Maximum heating temperature, ˚C	100	80	without heating
Plate capacity: flat-bottomed flasks 1000ml, pcs flat-bottomed flasks 500ml, pcs flat-bottomed flasks 100ml, pcs separating funnels 1000ml, pcs	 4 6 12 2	 2 2 4 –	 2 2 2 –
Power consumption, W	400	300	30
Supply voltage,V	220±10		
Overall dimensions, mm	470×350×200	360×270×180	360×270×120
Weight, kg	26	15	7

ROTARY EVAPORATOR PE-8920

Purpose: the rotary evaporator principle is that the evaporating flask generates an effective heat transfer for fast evaporation and prevents a local overheating whilst leading to a smooth mixing of the content.

Advantages:

Main unit:
- Rotation speed display (LCD);
- Motorized lift up and down (Motorized lift stroke is 160 mm);
- Automatic lift-up protection in case of electric power failure.

Heating bath:
- Teflon coated 5L heating bath;
- LCD screen displays current and setpoint temperature;
- Maximum heating temperature is up to 100°C (for water) and up to 180°C (for oil);
- Automatic stop heating in dry bath condition.

Technical specifications	PE-8920	
Main unit	Evaporation volume, ml	50-4000
	Rotation speed, rpm	20-300
	Lift-up and down	motor
	Head tilt angle	60°
	Power consumption, W	40
Heating bath	Temperature range, °C	from ambient to +180°C
	Material	Stainless steel coated with teflon
	Temperature accuracy	±1° C (water) ±2° C (oil)
	Heating power, W	1300
	Bath volume, L	5
Condenser	Diagonal	
Dimensions (L x W x H), (lift stroke 160 mm included), mm	380×340×692	
Weight, kg, no more than	23	

LABORATORY CENTRIFUGES PE-6900, PE-6910

PE-6900

PE-6910

Purpose: the instrument is intended for separating the fractions having different densities for chemical, biochemical, industrial and educational laboratories.

Features:
- Instrument housing is made of robust plastic;
- Compact, lightweight;
- Rotor imbalance safety;
- Electronic safety brake on lid opening for user safety;
- Smooth speed taker-up.

PE-6910 features:
- Long-life brushless motor without the need for service;
- Saving of speed and time setting when power is off;

Technical specifications	PE-6900	PE-6910
Maximum speed, rpm	4000	
Rotation speed setting	analog	digital with discreteness - 10rpm
Rotor type	fixed-angle	
Rotor capacity, ml	12 x 20	
Maximum relative centrifugal force (RCF), g	2325	
Maximum timer setting, min	0.30	0.99
Power consumption, W	135	
Noise level, dB	70	
Overall dimensions, mm	280×315×260	
Weight, kg	8.2	8.5

LABORATORY CENTRIFUGES PE-6906, PE-6916

PE-6906

PE-6916

Purpose: the instrument is intended for separating the fractions having different densities for chemical, biochemical, industrial and educational laboratories.

Features:
- Electronic safety brake on lid opening for user safety;
- Digital display;
- Starts and stops in seconds;
- Smooth and quiet running;
- Compact and lightweight.

PE-6916 features:
- Closed rotor leads to lesser friction, reducing noise & heat generation;
- Imbalance cut off safety;
- Digital timer programming function.

Technical specifications	PE-6906	PE-6916
Maximum speed, rpm	6000	6000
Rotor capacity, ml	8x1.5/2	
Speed accuracy, rpm	–	100
Maximum relative centrifugal force (RCF), g	2000	
Maximum timer setting, min	–	0,25
Noise level, dB	≤ 55	≤ 55
Overall dimensions, mm	162×157×115	
Weight, kg	1.1	1.2
Types of rotors in the standard equipment	8x1.5/2.0 ml, 2x8x0.2 ml,adapters for 0.2 ml or 0.4/0.5 ml	

HIGH-SPEED LABORATORY CENTRIFUGE PE-6926

Purpose: table-type high-speed centrifuge is intended for separating the fractions having different densities for chemical, biochemical, industrial and educational laboratories.

Features:

- Color touchscreen;
- Digital setting and indication of rotational speed and centrifugal force (RCF);
- Digital setting and indication of operation time;
- Uniform rotational speed acceleration;
- Different acceleration and deceleration time can be freely chosen;
- Parameter-saving function (up to 20 settings);
- Electronic safety brake on lid opening for user safety;
- Rotor imbalance safety
- Replaceable rotors.

Technical specifications	PE-6926
Maximum rotational speed, rpm	16500
Rotor type	fixed-angle
Rotational speed setting discreteness, rpm	50
Maximum relative centrifugal force (RCF), g	18780
Maximum timer setting	99hrs 59min
Timer setting discreteness, min	1
Noise level, dB	65
Overall dimensions, mm	308×260×310
Weight, kg	17

Replaceable rotors:

Vessel	Maximum rotational speed, rpm	Max. relative centrifugal force (RCF), g
12 x 1.5/2 ml	16500	18780
18 x 1.5/2 ml	15000	17860
24 x 1.5/2 ml	14000	18187
10×5 ml	14000	13600
8×7 ml	14000	12271
12×10 ml	12000	13400

WATER DISTILLERS PE-2205, PE-2210, PE-2220

Water distillers are intended for production of pure water by electrical heating distilling. It is applied in health and medicine units, chemical industries, scientific research institutions and laboratories.

Features:

- Made of high-quality stainless steel by stamping and welding;
- Characterized by anti-corrosion, age-resistant, easy operation, stable function, safety and durability;
- Coiled stainless steel tube condenser with good heating exchange and large water output;
- Power supply cut off when water level is low & it continues to reheating after water replenishment;
- One-piece assembly.

Scope of delivery:
water distiller - 1pc, operation manual - 1pc, plug - 1pc.

Technical specifications	PE-2205	PE-2210	PE-2220	
Output, L/h	5	10	20	
Water cooling flow rate, L	≤ 45	≤ 80	≤ 160	
Automatic cut off system (overheat protection)	+			
Supply voltage, V	220	380		
Power consumption, kW	4.5	7.5	15	13.5
Material	stainless steel			
Overall dimensions, mm	330×240×730	350×270×830	480×330×740	
Weight, kg	6	7.5	11	

GLASSWARE DRYERS PE-2000, PE-2010

PE-2010

PE-2000

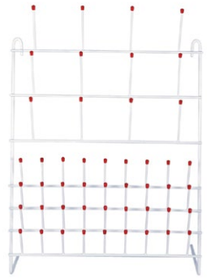
Purpose: the device is intended for fast drying of labware with warm air stream.

Features:

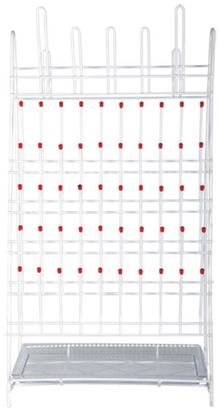
- Space-saving design;
- 15-20 minutes drying time;
- Air filter;
- Overheat protection;
- PE-2010 has digital indication of operation mode and drying time;
- PE-2010 can be both wall mountable and free standing;
- PE-2010 has a compartment for drying of small labware;
- PE-2010 has 3 operation modes: G - for drying of glassware, P - for drying of plastic ware, A - ambient temperature;
- PE-2000 has 2 temperature modes: with or without heating;

Technical specifications	PE-2000	PE-2010
Maximum air temperature, °C	65	75
Maximum continuous work time, hours	8	
Power consumption, W	925	1500
Supply voltage, V	220 ± 10 %	
Overall dimensions, mm	∅ 345x625	500×305×510
Number of tubes, pcs×∅, mm	27×∅12	26×∅12 и 13×∅ 6.5
Weight, kg	7.5	9.0

LABWARE DRYERS



48-position dryer



55-position dryer

Features:

- Wall mountable or free standing;
- Cost efficient.

Technical specifications	48-position dryer	55-position dryer
Material	steel covered with powder paint	
Plastic tray	-	+
Overall dimensions, mm	400×550×140	360×680×210
Weight, kg	0.75	1.6

TEMPRATURE CONTROLLERS PE-2100, ES-2100

PE-2100

ES-2100

Purpose: temperature controllers are intended for use with heating equipment including fabric heating mantles ESF and beaker heaters ESB requiring accurate temperature control.

Technical specifications	PE-2100	ES-2100
Supply voltage, V	220 ± 10%	
Power consumption, W	2500	1000
Maximum current load, A	11	4.5
Overall dimensions, mm	210×170×70	80×115×75
Weight, kg	1.0	0.5

LABORATORY JACKS PE-2400, PE-2410, PE-2420, PE-2430, ES-2400, ES-2410, ES-2420

PE-2400

PE-2410

PE-2430

PE-2420

ES-2400

ES-2410

ES-2420

Laboratory jacks are intended for supporting laboratory equipment such as heating mantles, hot plates, water baths, laboratory ware and other items that require stable and precise height regulation.

Features:

- Smooth and easy height adjustment;
- TPlatform is made of aluminum covered with powder paint;
- Lead screw and rotation axis are made of stainless steel;
- PE-2420 includes a support rod Ø12x780 mm in the scope of delivery.

Technical specifications	PE-2400	PE-2410	PE-2420	PE-2430	PE-2430	ES-2400	ES-2410	ES-2420
Platform dimensions (D x W), mm	250×200	150×150	250×200	190x158	190x158	200×200	150×150	100×100
Height adjustment, mm	55 – 315	55 – 275	70 – 325	27 – 167	27 – 167	55 – 315	55 – 275	45 – 145
Lifting capacity, kg	9	9	9	9	9	9	9	5
Platform and base color	grey					green		
Weight, kg	2.4	1.3	2.9	1.9	1.9	2.0	1.3	0.5

LABORATORY SUPPORTS PE-2700, PE-2710

PE-2700 purpose: fastening of laboratory ware and equipment.

Features:

- Stainless steel grips, clamps and holding rings;
- Holding ring is made of steel covered with powder paint.

PE-2710 purpose: fastening of burettes.

Features:

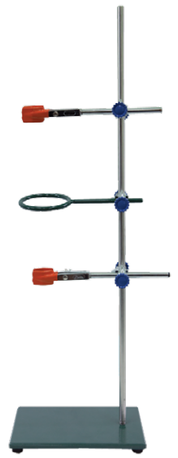
- Grips and clamps are made of polypropylene; screws - galvanized steel;
- Support base is made of steel covered with powder paint; support rod - stainless steel.

Scope of delivery:

PE-2700 – base - 1pc, support rod - 1pc, 2-finger grip - 2pcs, holding ring - 1pc, clamp for holding ring and grip - 3pcs.

PE-2710 – base - 1pc, support rod - 1pc, grip for burettes - 2 pcs, clamp for grips - 2pcs.

3-finger grip with clamp can be ordered additionally.



PE-2700

PE-2710

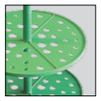
Technical specifications	PE-2700	PE-2710
Support rod , (∅×H), mm	12×720	
Base (D x W x H), mm	230×150×10	
Weight, kg	5.0	3.0

POLYPROPYLENE LABORATORY SUPPORTS PE-2910 – PE-2970

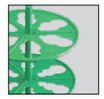
Purpose: storage of pipettes, cylindrical, round and pearshaped funnels.

Technical specifications	
Material	polypropylene
Overall dimensions (Ø×H), mm	220×425
Weight, kg	2.5

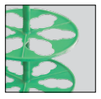
Metal base provides stability of supports. The design allows height adjusting of disks.



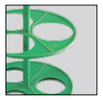
PE-2910
for 48 pipettes.



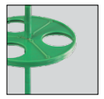
PE-2920
for 6 cylindrical separating funnels, 100 ml.



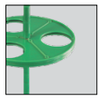
PE-2930
for 6 cylindrical separating funnels, 250 ml.



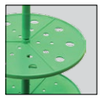
PE-2940
for 3 cylindrical separating funnels, 500 ml.



PE-2950
for 3 cylindrical separating funnels, 1000 ml.



PE-2960
for 3 round or pearshaped separating funnels, 250 or 500 ml.



PE-2970
for glass chromatic tubes.

PUMPING SYSTEMS PE-3000, PE-3010

PE-3000

PE-3010

Purpose: pumping of aggressive liquids (mineral acids, alkali solutions, solvents, etc) out of standard glass or polyethylene bottles (20L capacity) having neck for screw type cap (Ø 60mm) into any other vessels..

Features:

- Extreme air pressure in a bottle is produced by foot diaphragm pump (PE-3000) or manual bellows pump (PE-3010);
- PE-3010 is completed with the overflow valve that excludes contact with aggressive vapors at pumping process.

Scope of delivery:

PE-3000 – pumping system - 1pc, foot diaphragm pump - 1pc

PE-3010 – pumping system - 1pc, bellows pump - 2pcs.

Technical specifications	PE-3000	PE-3010
Output, L/min	up to 4.5	
Material	PTFE or polyethylene	
Bottle neck diameter/screw pitch, mm	60/5	
Overall dimensions, mm	241×244×612	110×250×670
Outside tube diameter, mm	12	
Weight, kg	0.6	0.7

VIBRATORY SIEVE SHAKER PE-6700

PE-6700

Purpose: the shaker shall be used to apply oscillations to the components of the process equipment placed on it (laboratory sieves) and can be used for the size analysis to control and separate loose materials according to their particle size.

Features:

- Worktable movements in a vertical plane allow sieving of wet materials;
- Smooth adjustment of worktable vibration amplitude allows choosing effective sieving conditions;
- Internal timer allows setting up necessary operation time;
- Time and oscillation speed are displayed.

Technical specifications	PE-6700
Power consumption, W	100
Supply voltage, V	220
Oscillation mode	rocking
Worktable oscillation frequency, Hz	from 12 to 25
Worktable oscillation amplitude, mm	from 0.25 to 4
Shaker operation time setting range	from 1 s to 99 min 59 s
Permissible total load on a worktable, kg	3
Maximum number of installed sieves, pcs	5
Overall dimensions, mm	320×155×385
Weight, kg	45

Notes:

Notes:

The manufacturer reserves the right for modification of a construction, design and a standard set of instruments.

Please consult an expert about technical specifications when purchasing.

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