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«URAL OPTICAL AND MECHANICAL PLANT» named after E.S. Yalamov»



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# MEDICAL EQUIPMENT

## CATALOGUE

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For detailed information please refer to the official representative of JSC "PA "UOMP".

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The **Ural Optical and Mechanical Plant named after Mr. E.S. Yalamov** is one of the leading enterprises of optical branch in Russia. The enterprise is a member of "Shvabe" Holding of «Rostec» State Corporation.

The key competences of JSC «PA «UOMP» are development and manufacture of high tech medical equipment, energy saving light equipment, instruments for geodesy and optical measurements, special purpose optical-electronic systems.

The enterprise has been engaged in production of neonatal equipment for about 30 years. The specialists of JSC «PA «UOMP» accumulated a huge scientific-technical and production potential for development and serial production of high tech products. Today the enterprise is one of the leading domestic manufacturers of neonatal, resuscitation and anaesthetic equipment, realizing the complex projects. All products maximally comply with the need of both doctors and patients.

The company actively cooperates with the leading higher educational institutions for research and experimental design works, masters new technologies in photonic, management systems, mathematic modeling.

## Modern instrument making



Staff of high qualification designers



Complex of modern high tech redivisions



Production of about 1500 medical items per year



Full life cycle: development, production, assembly and service maintenance of products

## Orientation to clients



Information and technical support of customers, service maintenance



Export to 50 countries worldwide



7 service-and-sales branches in the RF and 3 abroad (in Belarus, Switzerland, China)



Training of clients. Training courses, seminars and conferences

## Complex equipping of medical institutions



Selection of equipment according to the institution specific features



Equipping of premises on «turnkey» basis



Starting-up and adjustment of equipment



Training of doctors and service maintenance

## Guarantee of products quality



Russian and international certificates (CE, UKAS, ACCREDIA)



Certification of QMS ISO 9001:2015, ISO 13485:2016



Prime of the RF Government in the field of quality



References of experts

# ORS-BONO

Open resuscitation system for neonates



## ORS-BONO

The multifunctional system which combines modules of heating, phototherapy, respiratory support for intensive therapy of neonates, including premature infants.

### Advantages

- round form infant bed with rotation ability
- OLED display with convenient and easy for operation interface
- electronic adjustment of height and inclination of the infant bed
- observation of light alarms on 360° due to lightning of the system base
- various color code of alarm signals due to the priority
- convenient boxes for storage
- recording and indication of total operation time of the system
- multilevel intellectual safety system



### Smart control

- Three modes of infant bed heating:
  - preliminary warming-up
  - manual adjustment
  - automatic mode of the set temperature support
- Dual control of temperature by central and peripheral sensors



### Cautious ventilation

- Mode Resuscitation – short-term mandatory ventilation
- Mode nCPAP - continuous positive air pressure
- Pneumatic drive provides high quality of oxygen and air mixture formation

## Technical specifications

### Preliminary heating mode

Level of radiation intensity	not more than 15 mW/cm <sup>2</sup>
Time of preliminary mode operation	not more than 20 min.

### Manual mode

Radiation level at any point of working field:	
– basic range of radiation intensity	from 0 to 10 mW/cm <sup>2</sup>
– additional range of radiation intensity	from 10 to 30 mW/cm <sup>2</sup>
– without connected skin temperature sensors	≥10 mW/cm <sup>2</sup>

### Automatic mode

Range of temperature adjustment with discreteness 0,1°	from 30,0 to 38,0°C
Range of skin temperature sensors measurements	from 10,0 to 50,0°C

### Phototherapy

Average radiation intensity in the center of effective irradiation area	
– level 1	36 mW/cm <sup>2</sup>
– level 2	18 mW/cm <sup>2</sup>
Total radiation intensity in the center of effective irradiation area	
– level 1	1900±400 mW/cm <sup>2</sup>
– level 2	3800±700 mW/cm <sup>2</sup>
Methods of time installation	CLOCK (clockwise reading) TIMER (counterclockwise reading)

### Breathing therapy

Operation modes at breathing therapy	RESUSCITATION, nCPAP
Consumption of oxygen and air mixture	from 0 to 15 l/min
Concentration of oxygen in oxygen and air mixture is regulated within	from 21 to 100%
Pressure range of oxygen-air mixture at the output of the patient circuit:	
– RESUSCITATION mode	from 5 to 50 mm H <sub>2</sub> O
– nCPAP mode	from 0 to 20 mm H <sub>2</sub> O
Time of operation from accumulator at switching off from the mains	not less than 60 min

### Operation

Angle of infant bed rotation around its vertical axis	360°
Angle of infant bed inclination	10°
Value of lifting mechanism running	200 mm
Illumination in the mattress center	1000 lx

### Overall dimensions

Dimension at upper position of the pole	2130x800x1550 mm
Dimension at lower position of the pole	1900x800x1550 mm

### Delivery set

Unit of heating and phototherapy, respiratory unit, infant module on the pole	Basic
Mattress in hood	Basic
Skin temperature sensor (2 pcs.)	Basic
Infusion pole	Basic
Bottles holder	Basic
Eyes protection at phototherapy	Basic
Hoses for oxygen, air supply	Basic
Breathing mixtures humidifier «TEVLAR»	Additional
Apgar-timer with bracket	Additional
Breathing circuits with accessories, nasal cannulas, fixing holders of hoses	Additional

The product can be completed with other accessories upon the customer's desire.

# BONNY

Neonatal mobile incubator



## Mobile incubator BONNY

The incubator provides microclimate and safety conditions for neonates (with weight from 1 to 6 kg) during transportation within medical institution or by means of sanitary transport. It can serve as an alternative to transport incubator.

### Advantages

- mobile, compact, light body
- protection from cold, noise, vibration
- operated by the user microclimate inside the incubator
- resistance of the incubator to conditions of low ambient temperatures
- possibility of power supply from the accumulator, the transport means mains
- in accordance with international safety standards at transportation



### Functionality

- Built-in illumination for inspection
- Built-in ventilator for heat convection inside the incubator and breathed out gases extraction
- Transforming straps for shoulder, manual carrying and fixation to transport trolley
- Ports for connection of ventilator, syringe dosimeter, oxygen therapy equipment



### Information value

- System of the set and actual parameters indication:
  - body temperature (T)
  - oxygen saturation (SpO<sub>2</sub>)
  - heart rate (HR)
- Photoplethysmogram in the real-time mode
- Audible, light and information signaling with messages display

## Technical specifications

### Temperature regulation

Operation modes	Mode of preliminary warming up Basic mode
Range of regulation temperature setting by the skin temperature sensor of contact surface	from 35,0 to 39,0 °C
Time of readiness of the incubator for operation, after pressing the switching on button	not more than 5 s
Time of operation in the preliminary warming up mode	not more than 20 min

### Pulse oximetry

Range of measurement and values display SpO <sub>2</sub>	from 40 to 100%
Range of heart rate values measurement and display	from 30 to 300 beats/min

### Display

Type of display	color TFT
Diagonal	3,5"
Resolution	320x240 pixel

### Power supply units

Voltage and frequency of electric mains	110-250 V
Power consumption, not more than	50-60 Hz
Time of autonomous operation from the built-in accumulator at full charge (due to ambient temperature from -20 to +30°C)	not more than 150 VA
Time of full charge of the built-in accumulator from electric mains	not less than 4-8 h
	not more than 6 h

### Delivery set

Mattress in hood (1 pc.)	Basic
Small strap (2 pcs.)	Basic
Skin temperature sensor (2 pcs.)	Basic
Strap (2 pcs.)	Basic
Strap cover (1 pc.)	Basic
End strap (1 pc.)	Basic
Power supply cable (mains 220 V) (1 pc.)	Basic
Adapter, Mean Well (1 pc.)	Basic
Pulse oximetry sensor (neonatal/pediatric)	Additional
Set of bandages (neonatal/pediatric) (25 pcs.)	Additional
Set of protective filters FF60, EBMPAPST (10 pcs.)	Additional
Transport ventilator	Additional

The product can be completed with other accessories upon the customer's desire.

# ITN-01

Neonatal intensive care transport incubator

## Transport incubator ITN-01

It creates the optimal microclimate when transporting newborns inside medical institution or using medical transport.

### Advantages

- 4 windows and fully folding walls (frontal and lateral) for convenient manipulations with patient
- easily extendable mattress for quick access to the baby
- double cupola walls reducing heat and humidity losses
- resistance to adverse environmental conditions (frost resistance)
- battery power supply, hospital alternating current lines, transport vehicle direct current lines
- built-in illumination for easy inspection at any level of lighting



### Variability

- Two options for transport trolleys: small and large
- Chassis adjustment by height
- Possibility to install up to 2 storage batteries
- Possibility to connect up to 2 gas cylinders
- Expanded delivery set with gas analyzer and artificial lung ventilation devices



### Controllability

- Temperature control in the incubator using automatic modes:
  - by air sensor
  - by skin sensor
- Battery charge level indication
- Setting the gas flow using oxygen assembly
- Multilevel intelligent alarm system

## Technical specifications

### Temperature adjustment parameters

Adjustment mode by air sensor	25,0 – 37,0°C (additional mode up to 38,0°C)
Adjustment mode by skin sensor	34,0 – 37,0°C (additional mode up to 37,5°C)
Skin temperature sensor accuracy	≤0,3°C
Time to reach a stable temperature,	not more than 30 min

### Humidity and oxygen parameters

Relative humidity non-condensing operating range	30 ... 70%
Range of maintaining oxygen concentration	21-58 %
Oxygen cylinder with fixation	2 pc.
Oxygen cylinder volume	3 L

### Power supply sources

Electric power supply	
– from alternating current mains	220±22 V, 50±0,5Hz
– from direct current mains	12 V 10 A /24 V 6 A
Type of internal battery	Lead-acid
Number of batteries	1 or 2
Battery capacity	not less than 26 A·h
Service life	200 full charge/discharge cycles
Battery life time	90 min (1 battery), 180 min (2 batteries)

### Overall dimensions

Incubator dimensions without transport trolley (LxWxH)	970x550x560 mm
Large transport trolley dimensions:	
– in a lifted state (LxWxH)	1980x540x900 mm
– in a lowered state (LxWxH)	1980x540x350 mm
Small transport trolley dimensions:	
– in a lifted state (LxWxH)	1400x600x800 mm
– in a lowered state (LxWxH)	1400x600x400 mm
Baby mattress dimensions (LxWxH)	650x380x30 mm

### Delivery set

Storage battery (1 pc.)	Basic
Intravenous infusion pole (1 pc.)	Basic
Skin temperature sensor (2 pc.)	Basic
Oxygen assembly (1 pc.)	Basic
Baby restraint strap (2 pc.)	Basic
Transport trolley (1 pc.)	Basic
Shelf (1 pc.)	Basic
Oxygen gas analyzer	Additional
Storage battery (up to 2 pc.)	Additional
Oxygen cylinders (up to 2 pc.)	Additional
Transport artificial lung ventilation device	Additional

The product can be completed with other accessories upon the customer's desire.

# IDN-03

Neonate intensive care incubator



## Incubator IDN-03

Creating the optimal microclimate for intensive care for newborns.

Optional weighing and video monitoring system.

### Advantages

- 6 access windows and 2 side folding walls
- unique air circulation system that maintains stable microclimate during opening access windows
- servo control of the temperature, humidity and oxygen
- electronic adjustment of height and tilt of the infant module
- wide range of humidity parameter setting up to 95%
- self-diagnosis of the main device systems during actuation



### Configurable interface

- Informative, easily settable display for quick operation with commands
- Display of set and current parameters value
- Graphic trends according to the air temperature, skin temperature (by 2 sensors), humidity, oxygen concentration, body weight
- Saving monitoring results recorded during 7 days



### Intensive care

- Electronic alignment of the infant bed before weighing
- Automatic weighing mode after a certain time interval
- Imperceptible radiography by the patient
- Intelligent safety system:
  - central alarm indicator with 360 ° viewing
  - sound and visual signals
  - independent system of protection from overheating

## Technical specifications

### Adjustment of temperature, humidity, oxygen

Temperature adjustment by air	
– main range	from 30,0 to 37,0 °C
– additional range (upon confirmation by the operator)	from 37,1 to 39,0 °C
Temperature adjustment by skin	
– main range	from 34,0 to 37,5 °C
– additional range (upon confirmation by the operator)	from 37,6 to 39,0 °C
Adjustment step	0,1 °C
Adjustment of relative air humidity	from 20 to 95 %
Adjustment of oxygen concentration	from 21 to 40 %
Weight measurement	from 0,02 to 10 kg

### Operation

Ports (windows) for access to the incubator	4 pc.
Record in memory and output of trends to the monitor	from 3 hours to 7 days
Angle of the infant module slope	not less than ±10°
CO <sub>2</sub> concentration in the module	not more than 0,4%
Lifting mechanism stroke	not less than 240 mm
Ports-openings of tubes and infusion systems, not more than	12 pc.

### Power supply source

Voltage	110V, 220/230 V
Mains frequency	50/60 Hz

### Overall dimensions

Overall dimensions of the incubator (HxWxD)	1650x750x1100 mm
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### Delivery set

Trolley (1 pc.)	Basic
Skin temperature sensor (3 pc.)	Basic
Humidifier (2 pc.)	Basic
Mattress in hood (1 pc.)	Basic
Infusion pole (1 pc.)	Basic
Pole for suspended equipment (2 pc.)	Basic
Tool shelf (1 pc.)	Basic
Bottle holder (1 pc.)	Basic
Hood-cover (1 pc.)	Basic
Oxygen supply hose (1 pc.)	Basic
Filter (10 pc.)	Basic
Scales (1 pc.)	Additional
Video monitoring assembly (1 pc.)	Additional

The product can be completed with other accessories upon the customer's desire.

# IDN-02-«DANIO»

Incubator for neonates



## Modernized IDN-02

Creating the optimal microclimate for nursing of newborns. Optional delivery set with humidifier and scales.

In the new version of IDN-02 the electronic adjustment of temperature values and modern control algorithms are realized.

## Advantages

- reliable and intuitively controlled
- transport trolley with storage system or with lifting mechanism
- five access windows for patient care
- adjustment of the trolley height and infant bed slope
- brake mechanisms on each wheel
- fixation of the infusion pole, shelves
- connection of the weight monitor, oxygen preparation assembly, gas analyzer



### Convenient control

- Choice of temperature control mode: by air sensor/by skin sensor
- Indication of set and current parameters values on the main and auxiliary control units
- Sound and light alarm with various priority levels



### Additional functions

- Humidifier for servo control of humidity level
- Connecting the oxygen preparation assembly and gas analyzer for carrying out careful oxygen therapy
- The possibility to install weighing system with weight monitor

## Technical specifications

### Adjustment of temperature, humidity, oxygen

Temperature adjustment by air	from 25,0 to 39,0 °C
Temperature adjustment by patient's skin	from 34,0 to 39,0 °C
Humidity level in the infant compartment when equipped with air humidifier	not less than 85 %
Oxygen concentration adjustment	
– in infant compartment	from 21 to 44 %
– under neonatal cupola	from 45 to 95 %

### Operation

Vertical displacement (lift) of the infant module	200 mm
Infant module tilt angle	10°
Monitoring the neonate's body weight	from 0,1 to 10 kg

### Power supply source

Mains voltage	198...243,8 V
Frequency	50±0,5 Hz

### Alarm

Signals "Overheating", "Temperature", "Sensor", "Air", "Mains", "Failure"	available
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### Overall dimensions

Incubator dimensions (HxWxD)	685x590x1170 mm
Mattress dimensions (without weight monitor) (HxWxD)	627x345x25 mm

### Delivery set

Skin temperature sensor (2 pc.)	Basic
Air temperature sensor (1 pc.)	Basic
Transport trolley with cabinet/with lifting mechanism (1 pc.)	Basic
Mattress in hood (1 pc.)	Basic
Oxygen preparation assembly (1 pc.)	Basic
Oxygen tent (1 pc.)	Basic
Infusion pole (1 pc.)	Basic
Tool shelf (1 pc.)	Basic
Neonatal cupola (1 pc.)	Basic
Filter (1 pc.)	Basic
Hood (1 pc.)	Basic
Oxygen gas analyzer (1 pc.)	Basic
Poles for auxiliary equipment (large and small)	Basic
Scales	Additional
Weight monitor	Additional
Active humidifier	Additional

The product can be completed with other accessories upon the customer's desire.

# SNO UOMZ

Neonatal table with automatic maintenance of heating temperature



## Neonatal table SNO

Heating of neonates with the possibility of carrying out of oxygen therapy, radiography, blood transfusion, heart massage and other resuscitation activities.

### Advantages

- heat source: powerful infrared ceramic heater
- availability of the oxygen preparation unit with humidification function for therapy under neonatal cover
- user friendly control system
- height adjustment with the help of lifting mechanism
- adjustable inclination of infant bed
- 4 antistatic wheels with individual brakes
- audiovisual alarm system
- fixation of rotary tool shelves, infusion pole



### Intellectual control

- Automatic mode of temperature maintenance by skin sensor, when lasting heating of neonate is required
- Timer with time indicator for easy realization of medical procedures



### Radiography

- Turn of heating module for 65° for easy placement of X-ray equipment and phototherapy lamps over the bed
- Easy access to the block of placement of X-ray cassette without degradation of the patient's tranquility

## Technical specifications

### Adjustment of temperature and oxygen

Maximum density of infrared radiation	
– in all infrared range of spectrum	60 mW/cm <sup>2</sup>
– in near infrared range of spectrum (760-1400 nm)	10 mW/cm <sup>2</sup>
Range of preset temperature adjustment	from 35 to 37,9 °C
Range of skin temperature displayed by indicator	from 30 to 39,9 °C
Range of oxygen concentration adjustment under neonatal cover	40 - 95%

### Operation

Patient's bed inclination angle	±10°
Angle of heating module rotation around vertical axis	±(65±5)°
Continuous operation time	72 hours

### Overall dimensions

SNO in lower position of bed (HxWxD)	1950x710x1100 mm
SNO in upper position of bed (HxWxD)	2000x710x1100 mm
Height of the bed from the floor up to the mattress upper surface:	
– in lower position of the bed	950±5 mm
– in upper position of the bed	1000±5 mm

### Power supply source

Voltage of electric network	198-242 V
Frequency of electric network	50±0,5 Hz
Consumed power	not more than 700 V·A

### Delivery set

Heating module, neonatal table, trolley	Basic
Mattress in the hood	Basic
Support for X-ray cassette	Basic
Skin temperature sensor	Basic
Oxygen preparation unit	Basic
Infusion pole	Basic
Tool shelf	Basic
Oxygen mix delivery hose connected to the main / bulb with oxygen	Basic
Vial holder	Basic
Neonatal cover (oxygen tent)	Basic

The product can be completed with accessories and auxiliary equipment upon the consumer's request



# Radiant heat – Bono

Neonatal infrared heater



## Heater Radiant heat – Bono

The heater with phototherapy function is easy to use in wards with limited free spaces. The heater is compatible with beds and swaddling tables.

### Advantages

- mobile, compact, light
- heat source: powerful infrared ceramic heater
- light source: high-brightness LEDs of narrow spectrum of high radiation intensity
- long life time of LEDs is 50 000 hours
- record of total operation time of LEDs with data output to the display
- wide possibilities for temperature setting, heating power, phototherapy intensity
- availability of the infant bed placement level indicator
- pole height adjustment



### Safety

- 3-level safety system:
  - sound signal
  - light signal
  - automatic switching-off at patient's temperature above 38,5 °C and irradiator overheating
- Light panels for 360° viewing of alarm signal with different color code (red, yellow, blue) depending on priority



### Automatic control

- Automatic adjustment and control by the radiation intensity device in accordance with the set temperature (servocontrol)
- Continuous monitoring of the patient's current skin temperature using sensor
- Reliable and safe patient's heating without personnel supervision

## Technical specifications

### Operation modes

For warming	<ul style="list-style-type: none"> <li>- preheating</li> <li>- manual mode</li> <li>- automatic mode</li> </ul>
For phototherapy time	<ul style="list-style-type: none"> <li>CLOCK (direct countdown)</li> <li>TIMER (countdown)</li> </ul>

### Warming parameters

Warming source	Infrared ceramic heater with power of 750 W
Temperature adjustment range with discreteness of 0,1°C	from 30 to 38 °C
Providing sound and light emergency alarm	provided

### Phototherapy parameters

Radiation source	LEDs
Spectral range of light radiation	430-530 nm
Level of total radiation intensity for bilirubin at a distance of 800 mm from the warmer protective glass in the efficient irradiation area center, mcW/cm <sup>2</sup> :	
- maximum	3800±700 mcW/cm <sup>2</sup> nm
- mean	1900±400 mcW/cm <sup>2</sup> nm
Duration of one phototherapy cycle:	
- in CLOCK mode	99 h 59 min
- in TIMER mode	99 h 00 min

### Operation

Location height change of the warmer module	not less than 250 mm
Sound and light alarm	available

### Power supply sources

Voltage of electric network	198-242 V
Frequency of electric network	50±0,5 Hz

### Overall dimensions

Dimension at upper module position	1850x610x930 mm
Dimension at lower module position	1150x610x930 mm

### Delivery set

Pole (1 pc.)	Basic
Skin temperature sensor (1 pc.)	Basic
Newborn's eye protection glasses	Additional

The product can be completed with other accessories upon the customer's desire.

# Biliflex

Fibrooptical system for neonates phototherapy



## Phototherapy system Biliflex

Efficient and quick decrease of bilirubin level in neonates with jaundice owing to use of high intensive, constant and uniform therapeutic light.

### Advantages

- the possibility to hold the baby in arms without interrupting the phototherapy procedure
- possibility of use in conjunction with an incubator or heater
- timer and automatic switching-off system upon completion of the photo session
- automatic session switching-off when the system overheats
- meets the requirements of methodological recommendations of the Russian Association of Perinatal Medicine Specialists



### Functionality

- Uniform light radiation over the entire area of the mattress
- Tightness of the mattress, the possibility to carry out medical procedures
- Disposable removable fabric hoods on the mattress, providing infectious safety for the patient



### Portability

- Placing the control unit on the bed or incubator shelf
- Fixation of the system to horizontal rail or to vertical pole using bracket
- Convenient handle on the body
- The possibility to display on the screen the total operation time of the radiator

## Technical specifications

### Phototherapy parameters

Spectrum of therapeutic radiation	420-510 nm (with peak intensity at wavelength of 459 nm)
Peak value of the spectral radiation density in the center of the efficient irradiation area of the cloth with connector for the radiation level:	
– maximum	not less than 30 mcW/cm <sup>2</sup> ·nm
– mean	not less than 20 mcW/cm <sup>2</sup> ·nm
Total radiation intensity for bilirubin in the center of the efficient irradiation area of the cloth with connector for the irradiation level:	
– maximum	2700±675 mcW/cm
– mean	1800±450 mcW/cm
Duration of one phototherapy cycle	
1) in the "Timer" mode (countdown of phototherapy carrying out)	
– minimum duration	not more than 5 min
– maximum duration	not less than 72 h
2) in the "Clock" mode	not more than 72 h
Step of time change in the "TIMER" mode	5 min

### Dimensions and weight

Control unit (WxDxH)	200x180x200 mm
Cloth (mattress) (WxDxH)	230x10x430 mm
Cable with connector (WxDxH)	75x55x1150 mm
Efficient irradiation area of the cloth with connector	(200±5)x(300±5) mm
Weight:	
– control unit	3 kg
– cloth (mattress)	1 kg

### Power supply source

Voltage	98-242 V
Frequency	50±0,5 Hz
Power consumption	not more than 100 V·A
Protection from hazardous penetration of water or solid substances	IP23

### Delivery set

Fibrooptical mattress (1 pc.)	Basic
Power supply cable (1 pc.)	Basic
Bracket (1 pc.)	Basic
Hoods (10 pc.)	Basic
Eye protection during phototherapy	Additional

The product can be completed with other accessories upon the customer's desire.

# OFN-02 and OFN -03

Neonatal phototherapy irradiator



## Irradiators OFN-02 and OFN-03

Reduce the treatment time for newborns with jaundice. Reduce the percentage of diseases and complications associated with hyperbilirubinemia.

It is convenient to place products of the OFN range in wards with limited free space.

## Advantages

- light, compact and mobile
- light source: high-brightness LEDs of high radiation intensity
- 4 anti-static wheels with blocking pole height adjustment
- inclination and rotation of the irradiator in different planes
- noiseless operation of the product
- meets the requirements of methodological recommendations of the Russian Association of Perinatal Medicine Specialists



## Universality

- Convenient placement on the pole or on incubator cupola with non-slip feet
- \*Availability of the CLOCK (direct countdown) and TIMER (countdown) modes
- \*Record of total operation time (operating time) with data output to the display

\*functions in the OFN-03 model



## Controllability

- Setting the radiation intensity:
  - average level (for newborns 35 weeks of gestation or  $\leq 1000$  g)
  - maximum level
- 3-level intelligent safety system:
  - sound signal
  - light signal
  - automatic switching-off when the irradiator overheats

## Technical specifications

	OFN-02	OFN-03
<b>General parameters</b>		
Overall dimensions:		
– irradiator with pole	1523x698x575 mm	1550x680x1200 mm
– irradiator without pole	308x308x68 mm	310x310x70 mm
Weight:		
– irradiator with pole/illuminator	10,5 kg/1,8 kg	9 kg/2,3 kg
– irradiator without pole	1,2 kg	2 kg
Changing the height of the heater module location	350 mm	350 mm
Angles of rotation of the illuminator on the pole stud (around horizontal axis)	90°	90°
Sound and light signal	absent	available
Average service life	5 years	5 years
<b>Operating modes</b>		
According to the phototherapy time	–	CLOCK (direct countdown) TIMER (countdown)
<b>Phototherapy parameters</b>		
Radiation source	24 high-brightness LEDs	18 high-brightness LEDs
Spectral range of light radiation	450-470 nm	430-530 nm
Spectral density of radiation power:	at a distance of 460 mm from protective glass	at a distance of 450 mm from protective glass
– maximum	not less than 40 mcW/cm <sup>2</sup> nm	not less than 40 mcW/cm <sup>2</sup> nm
– mean	not less than 20 mcW/cm <sup>2</sup> nm	not less than 20 mcW/cm <sup>2</sup> nm
Duration of one phototherapy cycle:		
– in CLOCK mode	–	not less than 72 h 00 min
– in TIMER mode	–	not less than 72 h 00 min
Continuous operation time	not less than 72 h	not less than 72 h
Efficient irradiation area	not less than 300x220 mm	not less than 300x220 mm
<b>Power supply sources</b>		
Mains voltage	220/230 V	98-242 V
Frequency	50±0,5 Hz	50±0,5 Hz
Power consumption	30 V·A	50 V·A
<b>Delivery set</b>		
Eye protection during phototherapy (glasses)	Additional	Additional
Digital weekly timer	Additional	–

The product can be completed with other accessories upon the customer's desire.

# ODN-01

Heater for neonates



## Heater ODN-01

Maintaining hypothermia-prone newborn's optimum skin temperature. It allows to support contact between mother and child during the first days of the neonate's life.

### Advantages

- 2 modes of temperature servocontrol and adjustment: by skin sensor and mattress sensor
- maintaining the set temperature for 72 hours
- completely sealed mattress and replaceable hoods
- the hood with boards ("small nest") allows to take a comfortable physiological position and creates a feeling of comfort, safety
- self-diagnostics and automatic device calibration during actuation
- intelligent multi-level alarm system
- independent protection system from overheating



### Safety

- Indication on the control panel:
  - of the set temperature
  - of the current mattress temperature
  - of the current skin temperature (during the connection of sensor)
  - of the total operation time
- Automatic heater switching-off and alarm when reaching the mattress temperature 38°



### Universality

- Fixation on the board of bed or swaddling table with hooks located on the rear panel
- Two sizes of mattress:
  - – for incubator
  - for bed and swaddling table
- Two types of mattress hoods:
  - – with boards for fixing a child
  - without boards for carrying out operating procedures

## Technical specifications

### Temperature control

Set temperature range:	
– basic	from 35,0 to 37,0 °C
– additional	from 37,1 to 39,0 °C
Temperature setting discreteness	0,1 °C
Heater switching-off temperature during unacceptable overheating of the mattress surface:	
– during adjustment in the main range	38,0 °C
– during adjustment in the additional range	40,0 °C
Time of automatic restoration of the muffled sound alarm	not more than 10 min

### Operation

Continuous operation time	not less than 72 h
Service life	not less than 5 years
Protection class	IP62

### Power supply source

Mains voltage	220/230 V
Frequency	50±0,5 Hz

### Overall dimensions

Version 3170.10000000	20x410x555 mm
Version 3170.10000000-01	20x600x760 mm
Control unit	220x150x200 mm

### Weight

Version 3170.10000000	4 kg
Version 3170.10000000-01	4,2 kg

### Delivery set

Skin temperature sensor	Basic
Flannel hood with insert (1 pc.)	Basic
Flannel hood (4 pc.)	Basic
Oilcloth hood (1 pc.)	Basic

# MAIA-01

Multifunctional device of inhalation anesthesia



## Anesthesia-respiratory device MAIA-01

It is intended for adults and children above 1 year old or from 8 kg with application of any methods of anesthesia including inhalation anesthesia with low flow.

### Advantages

- high-precision noiseless electric motor is in the base of the device
- independence of ventilation from the compressed air source
- support of widely used anesthetics including xenon
- kitting with 2 vaporizers with possibility of switching off each of them from breathing circuit
- possibility to operate by the closed circuit
- mode of low flow anesthesia (Low-flow)
- elements of breathing circuit are easily disassembled and sterilized



### Anesthesia monitor

- Complex control of respiratory parameters
- Graphic monitoring in the real-time mode including scales of patient inhalation pressure
- Automatically scalable electronic rotameters for each gas
- High precision digital flow sensors



### Patient monitor

- Extended monitoring of patient's parameters and more precise representation about anesthesia carrying out
- Automatically configurable display and possibility of manual interface adjustment
- Adjustment of monitor position by means of rotating bracket

## Technical specifications

### General parameters

Category of patients	Children (from 1 year or 8 kg), adults
Types of breathing circuits	Semi-open, semi-closed
Anesthetics	Sevoflurane (Sev), isoflurane (Iso), enflurane (Enf), halothane (Hal), nitrogen oxide (N <sub>2</sub> O) Option: xenon (Xe) «Penlon» (Great Britain)
Vaporizers	«Penlon» (Great Britain)
Autonomous power supply	Available
Saving of trends and alarms on a SD card	Available

### Anesthesia monitor (integrated)

Parameters on the anesthesia monitor display (integrated)	<ul style="list-style-type: none"> <li>– maximum pressure (P<sub>max</sub>)</li> <li>– mean pressure (P<sub>mean</sub>)</li> <li>– limiting pressure (P<sub>pl</sub>)</li> <li>– minimum pressure (P<sub>min</sub>)</li> <li>– tidal volume (V<sub>te</sub>)</li> <li>– frequency (F)</li> <li>– minute ventilation (MV)</li> <li>– compliance ©</li> <li>– O<sub>2</sub> concentration at inspiration (FinCO<sub>2</sub>)</li> </ul>	<ul style="list-style-type: none"> <li>– O<sub>2</sub> concentration at expiration (FetCO<sub>2</sub>)</li> <li>– fresh mixture consumption (l/min)</li> <li>– positive end expiratory pressure (PEEP)</li> <li>– inspiration time percent (Ti:Tc)</li> <li>– sensitivity (trigger by pressure) (P<sub>trigg</sub>)</li> </ul>
Curves (with image fixation)	Pressure-time, flow-time, volume-flow, volume-pressure	
Integrated monitor display	10 inches	
Intervals of integrated monitor trends	1; 3; 6; 12 и 24 h	

### Lungs ventilation modes

Controlled ventilation	<ul style="list-style-type: none"> <li>– volume-controlled ventilation (VCV)</li> <li>– pressure-controlled ventilation (PCV)</li> <li>– periodic lungs inflation «SIGH» (VCV+Sigh)</li> <li>– positive end expiratory pressure (PEEP electronic)</li> </ul>
Assisted ventilation	<ul style="list-style-type: none"> <li>– pressure support ventilation (PSV)</li> <li>– apneic ventilation (VCV+Apn)</li> <li>– synchronized intermittent periodic ventilation (pSIMV+PSV and vSIMV+PSV)</li> </ul>
Spontaneous breath	Spont
Manual ventilation	Manual
Trigger	by pressure

### Patient monitor (external)

Channels of analysis unit	<ul style="list-style-type: none"> <li>– electrocardiography (with 3 or 5 leads)</li> <li>– temperature</li> <li>– gas analysis</li> <li>– pulse oximetry</li> <li>– sphygmomanometry</li> </ul>
Parameters on patient monitor screen	<ul style="list-style-type: none"> <li>– concentration of CO<sub>2</sub> at expiration/inspiration (Fin/FetCO<sub>2</sub>)</li> <li>– concentration of anesthetics at inspiration/expiration (Fin/Fet N<sub>2</sub>O, Xe, Sev, Iso, Enf, Hal)</li> <li>– minimum alveolar concentration of anesthetic (MAC)</li> <li>– arterial blood oxygenation (SpO<sub>2</sub>)</li> <li>– non-invasive blood pressure (NIBP: SYS/DIA/Mean)</li> <li>– heart rate (HR)</li> <li>– ST-level displacement for each ECG lead</li> <li>– patient's body temperature (T1 and T2)</li> </ul>
Curves (with image fixation)	<ul style="list-style-type: none"> <li>– electrocardiography (3 from 7 leads)</li> <li>– capnography trace</li> <li>– pulse oximetry</li> </ul>
Patient monitor display	12 inches

The product can be completed with accessories and additional equipment upon the user's request.

# SLE 6000

Artificial lung ventilation device with accessories



## Device of high class SLE 6000

Controlled artificial lung ventilation for newborns, babies and infants weighing from 500 g to 20 kg with pressure control and time switching.

### Advantages

- unique valveless technology
- flexible configuration and optional ability
- noiseless HFOV modes with leakages compensation
- noninvasive ventilation through passive or active CPAP generator
- high flow oxygen therapy
- system of automatic saturation support within the defined range Oxygenie
- capnography and pulse oximetry
- smooth transition between modes without change of patient circuit
- wide range of masks, cannulas and caps
- connection to the external monitoring systems (MES)



### Modern modes

- Volume targeted ventilation (VTV) in all modes
- Wide choice of noninvasive modes
- High frequency modes with active expiration
- Function of manual inspiration at HFOV
- Function of pre-aspiration oxygen injection (O<sub>2</sub>)



### Interface «Lunar»

- Touch display of high resolution with low level of glare, easily seen by the operator from any angle
- Unique technology of low level of display illumination for calmness of patients
- Individual settings of the screen layout

## Technical specifications

### Ventilation modes

Conventional ventilation	Convectional mandatory ventilation (CMV, CMV +VTV) Synchronized intermittent periodic ventilation (SIMV, SIMV with P Support, SIMV +VTV) Continuous positive air pressure (CPAP) Patient triggered ventilation (PTV, PTV + VTV) Pressure support ventilation (PSV, PSV + VTV)
High frequency ventilation	High-frequency oscillation (HFOV, HFOV+CMV with possibility to choose oscillation, HFOV +VTV)
Noninvasive ventilation	Noninvasive intermittent positive pressure ventilation (NIPPV) Nasal continuous positive airway pressure (nCPAP) Noninvasive intermittent positive pressure ventilation (NIPPV) Noninvasive positive pressure ventilation, triggered (NIPPV Tr.) Nasal high-frequency oscillation (nHFOV)

### Optional ability

Modules	Capnography (etCO <sub>2</sub> ) Pulse oximetry Masimo SET (SpO <sub>2</sub> ) Oxygenie - function of automatic oxygen saturation support within the target range Intellibrige - external monitoring system High-frequency ventilation (HFOV) Volume triggered ventilation (VTV) Noninvasive ventilation (NIV) Noninvasive initiated ventilation (NIPPV Tr.) High flow oxygen therapy (high-flow O <sub>2</sub> )
Pre-sanitization oxygen boost (O <sub>2</sub> Boost)	Available

### Monitoring

Display	Color touch Sharp 12.1'																		
Interface	Lunar™																		
Monitored parameters	<table border="0"> <tr> <td>- Leakage</td> <td>- Frequency of breath</td> <td>- Vmin</td> </tr> <tr> <td>- C<sub>2</sub>O/C</td> <td>- Expiration time</td> <td>- Vte</td> </tr> <tr> <td>- max inspiration time</td> <td>- Trigger</td> <td>- Ratio I:E</td> </tr> <tr> <td>- DCO<sub>2</sub></td> <td>- SpO<sub>2</sub>, PR, PI</td> <td>- Pressure</td> </tr> <tr> <td>- etCO<sub>2</sub></td> <td>- Compliance</td> <td>- Flow</td> </tr> <tr> <td>- FiO<sub>2</sub></td> <td>- Resistance</td> <td></td> </tr> </table>	- Leakage	- Frequency of breath	- Vmin	- C <sub>2</sub> O/C	- Expiration time	- Vte	- max inspiration time	- Trigger	- Ratio I:E	- DCO <sub>2</sub>	- SpO <sub>2</sub> , PR, PI	- Pressure	- etCO <sub>2</sub>	- Compliance	- Flow	- FiO <sub>2</sub>	- Resistance	
- Leakage	- Frequency of breath	- Vmin																	
- C <sub>2</sub> O/C	- Expiration time	- Vte																	
- max inspiration time	- Trigger	- Ratio I:E																	
- DCO <sub>2</sub>	- SpO <sub>2</sub> , PR, PI	- Pressure																	
- etCO <sub>2</sub>	- Compliance	- Flow																	
- FiO <sub>2</sub>	- Resistance																		
Loops with function «storage» are available	Volume/pressure (V/P), flow/pressure (F/P), flow/volume (F/V)																		
Function «Screen capture»	Available																		

### Outputs, connections, compatibility

Outputs	Rs232, VGA, LAN, Ethernet, USB for saving of logs and data
Connection	Electronic nebulizer AeroGen, pneumatic nebulizer

### Power supply units

Voltage	100-240 V
Frequency	50-60 Hz
Built-in accumulator battery	3 hours (in all modes) with 100% battery charge
Time of battery charge	18 h to 100%, 8 h to 80%

### Overall dimensions

Control unit dimensions	330x330x470 mm
Height on the pole	1140 mm

The product can be completed with accessories and additional equipment upon the user's request.

# SLE 5000

Neonatal – pediatric device for lungs artificial ventilation with HFO function



## SLE 5000 device

Realization of lasting respiratory support of neonates, infants and children having the weight from 300 g to 20 kg.

The manufacturing version of SLE 5000 with high frequency oscillation ventilation (HFO) allows to nurse the patients with severe respiratory troubles.

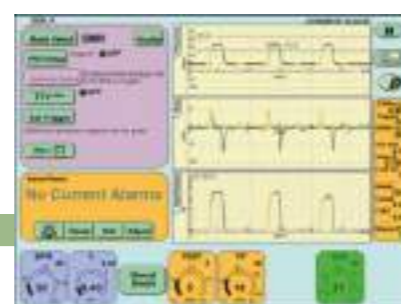
## Advantages

- unique valve less technology excluding resistance during breathing
- possibility to combine traditional and backup ventilation modes
- powerful and soundless HFOV mode with active expiration
- non invasive respiratory support CPAP
- change over between the modes without circuit replacement (including HFOV)
- possibility of inhalation with nitric oxide
- basket on the pole to store circuits and flow sensors



## Effective gas exchange

- The TTVplus function automatically regulates the least possible pressure for stable respiratory volume
- The PSV ventilation mode with leakages compensation system
- The SIMV mode with pressure support decreasing the respiration work by 20%



## Comfortable interface

- Setting of preliminary parameters settings in all modes without interruption of lungs ventilation process
- Simultaneous digital and graph monitoring of all parameters of ventilation and lungs mechanics
- Simple layout of the screen and availability of the night mode

## Technical specifications

### Ventilation modes

Mandatory ventilation	Continuous mandatory ventilation (CMV) Continuous mandatory ventilation with preset respiratory volume (CMV c TTVplus)
Auxiliary ventilation	Patient triggered ventilation (PTV) Patient triggered ventilation with preset respiratory volume (PTV + TTVplus) Pressure support ventilation (PSV) Pressure support ventilation with preset respiratory volume (PSV + TTVplus) Synchronized intermittent ventilation (SIMV) Synchronized intermittent ventilation with pressure support (SIMV + PSV) Synchronized intermittent ventilation with preset respiratory volume (SIMV + TTVplus) Synchronized intermittent ventilation with pressure support (SIMV + PSV) Synchronized intermittent ventilation with preset respiratory and pressure support volume (SIMV + TTVplus +PSV)
Spontaneous breath	Constant positive pressure in airways (CPAP) – with flow sensor / without flow sensor – with apnoea support – with preset respiratory volume CPAP
High frequency oscillation ventilation	HFO, HFO с ограничением по давлению (HFO+CMV)

### Ventilation parameters

Graph monitoring (trends)	Minute volume by time, maximum pressure by time, mean pressure by time, minimum pressure by time, percent oxygen content by time, resistance by time, compliance by time
Coefficient of gas transport by time based on volume and rate (DCO <sub>2</sub> )	Available
Loops	Volume/pressure (V/P), flow/pressure (F/P), flow/volume (F/V)

### Power supply source

Voltage	100-240 V
Power supply frequency	50-60 Hz
Storage battery	45-60 min. of operation (depending on operation mode)

### Overall dimensions

Ventilator size (LxHxD)	330x330x470 mm
Height on short pole	114 cm
Height on long pole	131 cm

### Delivery set

Stable pole-trolley	Basic
Single reusable patient circuit 10 mm (2 pieces)	Basic
Start-up kit for nasal ventilation	Basic
Autoclavable flow sensor	Basic
Cable for use with flow sensor	Basic
Breathing mixtures humidifier with heating	Additional

The product can be completed with other accessories upon the customer's desire.

## SLE 2000

Artificial lungs ventilation device



## Neonatal SLE 2000

Controllable artificial ventilation of lungs for neonates, infants and children having the weight from 500 g to 20 kg with pressure control and time switch over.

## Advantages

- unique valve less technology excluding resistance while breathing
- support of constant waveform at all frequencies of breathing
- filtration of exhaled gases
- additional output of mixed flow
- possibility to use during inhalation therapy with nitrogen oxide
- alarm shut down of high pressure



## Valve less technology

- Advantages of non availability of exhalation valve:
  - no obstacles at exhalation segment,
  - lesser quantity of components and reduction of probability of incorrect assembly faults,
  - easy cleaning of circuits and reduction of contamination risk



## Functionality

- Availability of invasive and non invasive ventilation modes: CMV, PTV, SIMV, CPAP and INCA CPAP
- Digital indication and exact control of oxygen content in mixture (FiO<sub>2</sub>)
- Availability of built-in oxygen analyzer with digital indicator

## Technical specifications

## Operation

Oxygen concentration in breathing mixture	from 21 to 100 %
Expiration end pressure (CPAP/PEEP)	from 0 to 15 cm water column
Peak inspiration pressure (PIP)	from 0 to 60 cm water column
Value of relation between inspiration/expiration duration	from 9.9:1 to 1:9.9
Trigger sensitivity	from 20 to 4 ml/s
Duration of mandatory inspiration in CMV, PTV, SIMV modes and manual ventilation in CPSP mode:	
– within the range 1 – 125 min	from 0,1 to 3 s
– within the range 126 – 250 min	from 0,01 to 0,3 s
Ventilation rate in CMV, SIMV and PTV modes (when changing over to spare frequency):	
– first range	1-125 min
– second range	126-250 s

## Power supply source

Voltage	220±22 V
Frequency of electric mains	50 Hz

## Dimensions

Sizes	310x370x320 mm
Height on pole	1370 mm

The product can be completed with accessories and additional equipment upon the user's request.



## SLE 1000

Artificial lungs ventilation device for neonates

Device of nCPAP therapy  
SLE1000

Nasal lungs ventilation with constant positive pressure with a variable flow generator for neonates and infants having the weight from 300 g to 10 kg.

## Advantages

- servo controlled speed of flow to maintain the preset pressure
- automatic compensation of leaks by increasing the flow while keeping the constant pressure
- electronic blender of oxygen: automatic maintenance of oxygen concentration at constant level
- continuous apnoea monitoring by pressure in airways
- automatic calibration of oxygen sensor
- intellectual system of alarm signalization
- «Pressure boost» function
- suitable for portable and transport use



## Functionality

- Unique light panel for observation of alarm signal at 360° of red, yellow, blue colors depending on the priority
- Built-in battery with large operation resource (up to 4 hours)
- Rotary input connector to be mounted onto the tool shelf, infusion pole



## User friendly interface

- Quick access to functions and settings with the help of a rotary button-handle
- Using the «Pressure boost» button it is possible to increase pressure for short time to restore alveoles or stimulate the infant's spontaneous breath
- LED indication of the battery charge level

## Technical specifications

## Operation

CPAP pressure	2 – 12 mbar
Apnea time	5 – 90 sec
Adjustment and measurement of FiO <sub>2</sub> concentration	21 – 100%
Possibility of manual delivery of additional volume for emergency cases	up to 3 l/min
Flow adjustment for preset pressure maintenance	Automatic
Possibility to use flow generators of any manufacturers	Available
Oxygen cell calibration when the device is being switched on	Automatic
Compensation of leaks in the patient's circuit	Automatic
Air/oxygen blender	Electronic, not requiring servicing and calibration
Apnea monitoring	Continuous
Ventilation parameters to be adjusted by the user	Pressure, apnoea time, FiO <sub>2</sub> concentration, trigger sensitivity change
Ventilation parameters to be adjusted by the device automatically	Flow adjustment, compensation of leaks in the circuit, oxygen calibration, self testing
Alarms panel	Light and sound with circular observation (360°C) to give alarm to the personnel

## Monitoring

Air mean pressure	0 – 20 mbar
Oxygen concentration	from 21% to 100%
Breath rate	0 – 200 breaths per minute
Representation of breath rate on display	Diagram and also numeric value
Representation of pressure changes on display	Diagram
Parameters displayed on monitor	– Alarm notification – Breath rate – MAP (mean air pressure) – Flow rate – FiO <sub>2</sub>
Record of patient's attempts to breath	Visual on LC display
Connectors for data transmission to PC	– serial port RS232C – serial port compatible with IBM-AT – 9-pin Dsub
Patient's apnea alarm	Available

## Power supply source

Voltage	100-240V
Frequency of electric mains	50-60 Hz
Autonomous operation time	up to 4 hours
Battery full charge time	not more than 4 hours

The product can be completed with accessories and additional equipment upon the user's request.

# APDN-01

Breath support device for neonates



## APDN-01 with humidifier

Noninvasive support by means of nasal cannulas of continuous positive air pressure (CPAP) of infant stimulates breath and prevents falling of respiratory bags

### Advantages

- compact and mobile
- reliable and intuitively understandable in operation
- autonomous power supply source, possibility of continuous operation without power supply
- supply of oxygen and air mixture through nasal cannulas with flow generator
- mobile pole with elements of fixation for humidifier
- 5 antistatic wheels with individual locking system
- intellectual alarms system for provision of maximum patient's safety



### Safety

- Oxygen concentration control by means of gas analyzer or gas mixtures oxygen monitor
- Light and audible alarm signalization at increase or decrease of pressure from the set value



### Versatility

- Convenient for use in wards with restricted free space
- It is possible to use for therapy of neonate or infant, placed on the opened bed of the incubator (bed, neonatal table)

## Technical specifications

### Operation

Mode of continuous positive air pressure on the basis of set by the doctor pressure value (nCPAP)	Available
Operation mode	Continuous
Time of operation mode setting	not more than 30 sec
Oxygen pressure at the blender inlet	0,35±0,15 (3,5±1,5) MPa (atm)
Air pressure at the blender inlet	0,35±0,15 (3,5±1,5) MPa (atm)
Difference of air and oxygen pressure	not more than 0,1 MPa
Oxygen and air mixture pressure at the patient's circuit outlet	0-15 mbar
Oxygen concentration in oxygen and air mixture	(21-100) ± 5 %
Limits of signaling actuation at increase of pressure in the patient's circuit above that, set by the doctor	3±0,5 mbar
Limits of signaling actuation at decrease of pressure in the patient's circuit above that, set by the doctor	2±0,5 mbar
Limits of emergency valve actuation	20±1 mbar

### Power supply

Power supply voltage	100-240 V
Power supply frequency	47-63 HZ
Power consumption	25 VA
Possibility of independent power supply	available

### Overall dimensions

Overall dimensions of the blender	320x190x230 mm
Overall dimensions of the pole	635x635x1350 mm
Weight of the device	16 kg
Weight of the blender	2,7 kg

### Delivery set

Pole with holders (3 pcs.)	Basic
Breathing mixtures humidifier with accessories «Tevlar-UOMZ»	Additional
Gas analyzer of oxygen «GKPM-02-INSOVT» with bracket	Additional
Oxygen monitor	Additional
Kits of equipment:	
– resuscitation breathing circuit for neonates	
– patient's breathing circuit with breathing generator and nasal cannulas	
– nasal cannulas for neonates	Additional
– breathing fixing cap	
– hoses for air/oxygen supply	
– fixing holder for hoses	

The product can be completed with other accessories upon the customer's desire.

# TEVLAR

Breathing mixtures humidifier



## Respiratory gas humidifier Tevlar

Heating and humidification of respiratory gas coming to the patient during lungs artificial ventilation, oxygen therapy, inhalation anaesthesia.

### Advantages

- variability of model range:
  - 1) standard-manufacturing version «Tevlar» with heating of breathing circuit, possibility of temperature and humidity setting on the display and automatic control of parameters on the patient
  - 2) economy-manufacturing version «Tevlar-01» with possibility of heating element temperature adjustment
- completing with a reusable chamber of UOMP production with possibility of water additional filling without interruption of medical procedure
- for invasive and non invasive ventilation of lungs of neonates, infants and adults
- compatible with most of models of respiratory devices and oxygen inhalers
- compatible with various types of chambers having capacity of 250ml/350ml: single use/ reusable, self-filled / with manual filling



### Controllability

- Setting of respiratory gas parameters (in manufacturing version «Tevlar»):
  - temperature (28-38°C)
  - humidity (75% or 100%)
- Accurate measurements of temperature and humidity at output from the breathing circuit with the help of a unified digital sensor
- Display of the set and measured temperature values



### Safety

- Signalization in case of respiratory gas overheating and failures during operation:
  - sound alarm
  - alarm display
- Possibility to use for neonates with low flows of respiratory gas from 2 l/min

## Technical specifications

	Tevlar (3708.00000000)	Tevlar-01 (3708.00000000-01)
<b>Control parameters</b>		
Range of temperature at the output of supply hose	from 28 to 38°C	–
Range of temperatures of heating element	–	from 45 to 75°C
Step of temperature setting	1°C	3°C
Temperature error	± 2°C	± 2°C
Relative humidity at the output of supply hose	(75±12)%; (100-15)%	–
Range of respiratory gas flows	from 2 to 50 l/min	from 2 to 50 l/min
Duration of achievement of the set humidity and temperature	not more than 20 min	not more than 20 мин
Conditions of operation: range of environmental temperatures	from 15 to 35°C	from 15 to 35°C
<b>Dimensions and weight</b>		
Overall dimensions (WxLxH) without supply hose and chamber	(145±5)x(175±5)x(135±5) mm	
Weight	2,7 kg (3 kg at full delivery set)	
<b>Power supply units</b>		
Power supply voltage	220 V	
Power supply frequency	50 Hz	
<b>Delivery set</b>		
Temperature / humidity sensor (UOMP)	Basic	–
Thermometer (Fisher & Paykel Healthcare Ltd.)	–	Additional
Bracket (UOMP)	Additional	Additional
Reusable humidifier chamber for infants / adults (UOMP)	Additional	Additional
Single use / reusable humidifier chamber for infants / adults, self-filling (Intersurgical, Fisher & Paykel Healthcare)	Additional	Additional
Resuscitation and anaesthetic breathing circuits for neonates / infants / adults, without heating / with heating / with double heating of inhalation line (Fisher & Paykel Healthcare, Intersurgical)	Additional	–
Single use / reusable resuscitation and anaesthetic breathing circuits fir neonates / infants / adults (Teleflex Medical, Flexicare Medical Limited, WILAMed GmbH, VADI Medical Technology Co. Ltd, Covidien Llc, «Medsilicon» Ltd., VBM Medizintechnik)	–	Additional
Adaptors for breathing circuits (Intersurgical, Fisher & Paykel Healthcare, VBM Medizintechnik)	Additional	Additional

The product can be completed with other accessories upon the customer's desire.

# AED-A15

Automated external defibrillator



## Automatic AED-A15

Rendering the first aid during sudden cardiac arrest due to development of ventricular fibrillation or ventricular tachycardia without pulse.

The device automatically fixes disturbances of cardiac beats rate and gives a signal when it is required to make a discharge.

## Advantages

- compact and light
- simple and easy-to-use: defibrillation in 4 actions
- visual and sound accompaniment of the operator's actions with lighting of current stages
- voice prompt about beginning of cardiopulmonary resuscitation accompanied by blinking of action indicator and sound signal
- universal electrodes to be used both for adults and children
- service life of the battery - 5 years



## Functionality

- Quick «start» by opening the cover
- Display of operation status, battery charge level
- Memory card SD for data record and storage
- Automatic procedure of self testing every 24 hours, 1 time a week, 1 time a month



## Ergonomics

- Delivery set has a soft bag for carrying.
- Comfortable location of the handle.
- Fixation of the defibrillator: on the wall or installation into a special case.
- Single use electrodes with applied gel for maximum speed of reaction.

## Technical specifications

### Electrocardiogram

Groups of patients	Adults and infants (1-8 years old or having the weight less than 25 kg)
Pulse form	Bi-phase trapezoid with patient's impedance compensation
Discharge energy	Adult mode: 170 – 200 J Infant mode: 45 – 50 J
Mode	Semi automatic
Leads	2 (RA, LL)
Range of chest resistance values	25 – 200 Ohm
Heart rate	20 – 300 beats/min
Recognition	Ventricular fibrillation (V/F) Ventricular tachycardia (V/T)

### Indicators and data transmission

Visual	Panel of actions indicators, status display (status of AED A15, battery, temperature), light diode indicators (patient mode switch)
Maximum intensity of voice commands sound and cardiopulmonary resuscitation signals at a distance of 1 m	85 dB
Data storage and transmission	Memory card SD, IR port

### Self testing

Periodicity	Every 24 hours, once a week, once a month
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### Overall dimensions

Dimensions (WxHxD)	240x294x95 mm
Weight	2,65 kg with power battery without electrodes

### Power supply

Type of battery	LiMnO <sub>2</sub>
Productivity	Not less than 200 discharges with 200 J energy or 10 hours of operation in monitoring mode
Storage period	2 years from the date of manufacture

### Adult/infant electrodes

Type of electrodes	Single use electrodes
Minimal quantity of discharges with maximal energy	10 discharges with 200 J energy

### Delivery set

Single use electrodes «PADS-AP» (1 piece)	Basic
Power battery (1 piece)	Basic
Antiseptic spirit sterile napkin (1 piece)	Basic
Installation for shaving APEXMED (1 piece)	Basic
Soft bag for transportation (1 piece)	Basic
Memory card SD (1 piece)	Additional
Compact-disk with software HeartOn AED Event Review (1 piece)	Additional
Adapter for IR port (1 piece)	Additional
Case for storage (1 piece)	Additional

The product can be completed with other accessories upon the customer's desire.

# DFR-02

Synchronized defibrillator-monitor



## Defibrillator DFR-02

Reduction of heart rate disturbances with the help of electric pulse, registration and indication of bioelectric heart potentials on the monitor.

### Advantages

- universality: the possibility to use both in hospitals and in sanitary transport
- maintenance of standard pulse shape at any changes of patient resistance
- effective pulse of minimal damaging influence
- built-in self diagnostic mode
- system of ECG channel protection from defibrillation impulse
- electrodes of different area for adults and infants



### Функциональность

- Быстрый «старт» путем открытия крышки
- Индикация состояния рабочего статуса, уровня заряда батареи
- Карта памяти SD для записи и хранения данных
- Автоматическая процедура самопроверки каждые 24 ч, 1 раз в неделю, 1 раз в месяц



### Эргономика

- В комплекте мягкая сумка для переноски
- Удобное расположение ручки
- Крепление дефибриллятора: на стену или установка в специальный кейс
- Одноразовые электроды с нанесенным гелем для максимальной скорости реагирования

## Technical specifications

### ECG record

Impulse shape	bipolar, trapezoid
Energy levels	8 levels: 5, 10, 25, 50, 75, 100, 150, 200 J
Operation mode	– synchronized / asynchronous defibrillation – cardio monitor mode (ECG record) – from individual ECG electrodes in 3 leads – from defibrillation electrodes
ECG record	– from individual ECG electrodes in 3 leads – from defibrillation electrodes
Time of readiness to operation	5 s

### Displayed information

Display	Liquid crystal display with adjustable contrast
Information on display	– date and time – accumulator status – ECG scan out – heart rate and patient's resistance – activation of sound alarm – activation of ECG signal input from electrodes for defibrillation – defibrillation pulse energy – operation mode (synchronization / defibrillation)
Information at printer printout	– ECG – date, time – operation mode, speed of output for printing – preset energy, patient resistance – full name, age, diagnosis
Information saving	Archiving up to 40 fragments of ECG is possible

### Power supply source

Voltage	198-242 V
Frequency of electric mains	50 ±0,5 Hz
Accumulator	available
Accumulator capacity	2 hours in the monitor mode / 30 discharges with maximum energy

### Delivery set

Disposable ECO electrodes having diameter 50 mm (1 package, 30 pieces)	Basic
ECG cable (1 piece)	Basic
Power cable (1 piece)	Basic
Thermo chemical paper 57 mm (1 piece)	Basic
Bag (1 piece)	Additional

The product can be completed with additional electrodes for children, additional accumulators and other accessories upon the consumer's request.

# ECO

Disposable cardiograph electrodes



## ECO disposable electrodes

Record of ECG from children and adults in medical institutions, by emergency brigades.

They can be used at infectious, surgical departments.

### Advantages

- suitable for short-time and lasting ECG monitoring
- provides for quick getting of readings after electrode application to the skin
- do not cause any allergy reactions, skin irritation
- no additional skin treatment is required after removal of electrodes
- manufactured from ecologically clean and safe materials
- are in compliance with the requirements of international standard ANSI/AAMI Ec12



### Reliable fixation

- Electrode base material – «Scanfoam» tape
- Hypo allergenic sold state gel with excellent adhesive and conductive ability
- Reliable fixation of electrode on the skin
- Sensor covered by Ag/AgC composition (silver / silver chloride)

### Universality

- Compatibility with electrocardiographs, hollers, defibrillators, anesthesia machines etc.
- Connection with equipment cable via a standard connector «button»
- Period of storage up to 2 years (with package hermeticity kept)

## Technical specifications

### Overall dimensions

Size of the area being in contact with the skin (diameter)	30 mm	40 mm	50 mm
Weight	0,7±0,1 g	0,9±0,1 g	1,1±0,1 g
Form		Circular	

### Operation

Diameter of current collecting surface	10±0,5 mm
Base material	«Scanfoam» tape
Gel	Solid
Connection to the cable	«Button»
Sensor Ag/AgCl	available
Density	35 g/m <sup>3</sup>
Time of readiness for ECG record	not more than 10 sec
Full resistance of electrode	not more than 5·10 <sup>3</sup> Ohm

### Storage

Conditions of storage and transportation	from -50 to +50 °C relative humidity – up to 80% (with temperature 25 °C)
Period of storage (with sealed package)	2 years from the day of manufacture (mentioned on the package)
Period of storage (with open package)	1 week

### Delivery set

Number of electrodes in package	30 units
Number of electrodes in box	1 200 units

It is possible to complete the product with the ECO equipment electrodes of other manufacturers recording the electrocardiogram.

# GRATITUDE AWARDS

The many years experience, powerful scientific-technical potential, modern production facilities and great number of key competences and technologies allow JSC «PA «UOMP» to provide for perfect quality of manufactured products.

The best confirmation of this are multiple appreciations, prestigious titles and diplomas of all-Russian and international competitions:

- Gratuity of the President of the Russian Federation
- «Prime of the RF Government in the field of quality (in 2005, 2011, 2018)»
- The best enterprise in the nomination «For development of social partnership in the organizations of production sphere» of all-Russian competition «Russian organization of high social efficiency» in which 2000 enterprises from the whole Russia took place
- Victory in the nomination «Sixth wave» for the achievement of high results in the field of innovations
- For the development of MAIA-01 device in 2016 JSC «PA «UOMP» was awarded a National prize in the field of import substitution «Priority-2016» in the category «Priority-Med»
- «Golden and silver medals of the Moscow International Salon of inventions and innovative technologies «ARKHIMED» for the period 2016-2019 years (9 golden, 2 silver and 3 bronze medals)»
- Golden medal of the III International exhibition of technical innovations, patents and inventions «INVENT ARENA», 2018.
- «Silver medal of the IV International competition of innovations iCAN 2019 in Toronto for the development of portable neonatal incubator Bonny»

