INTEGRAL

PRODUCTS AND DEVICES OF MEDICAL EQUIPMENT AND MEDICAL USE/ HEALTHCARE APPLIANCES

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INTEGRAL

The "DEA-100" electronic automated dosing device.

TU BY 100141154.001-2010 Standard Spec/rev. «2»
Registration Certificate of the Ministry of Health of the Republic of Belarus № IM-7.96892/1511

Electronic automated dosing device is designed for a high accuracy long-term dosed infusion of liquid medicine forms with a preset volumetric flow rate and the total volume of infusion. Continuous monitoring of parameters of the infusion, wide range of functions, bright LCD display, memory for the data real-time recording, pressure sensor for occlusion monitoring, battery power and built-in stand-mounting system all at once make the dispenser multi purpose and capable of solving a variety of therapeutic tasks.

Application area includes health care facilities as well as patient transportation facilities such as ambulance cars.

The dosing device is capable of the bellow functions and allows you to:

- perform infusion with a preset volume and rate;
- conduct bolus dosing either with a preset volume and rate in automatic mode; or with the fixed rate in manual mode;
- change the parameters of infusion without interruption of the infusion process - "Titration" function;
- make settings of the infusion volume rate in "Ml/h", "Dose" - using dose calculator and based on the body surface area;
- automatically detect six typical sizes of disposable syringes (5, 10, 20, 30, 50, 100 ml);
- choose from the list a company-manufacturer of the syringe to increase the accuracy of infusion;
- enter a new type of the syringe into the data base;
- establish five levels of the alarm trip for pressure limitation in the infusion line (occlusion levels);
- automatically calculate the time for infusion of a preset volume;
- continuously monitor both preset and infused volume;
- monitor the remaining time (time left before the end of infusion process);
- continue infusion of the drug with a minimum rate after termination of infusion mode – “keep-vein-open” mode (KVO), use the Antibolyus function;
- automatically keep the event log - each event as well as infusion parameters are recorded;
- save all the parameters of the dispenser operation in the non-volatile memory;
- create and use customized settings for dispenser operation;
- change the interface language - Russian /English;
- provide an alarm trip at the end of the infusion process, when the liquid approaches the end/runs out in the syringe, when there is no syringe; in the events of incorrect input of infusion parameters, low battery, internal error, occlusion; in emergency situations;
- perform infusion at 230V power voltage supplied from electrical mains and at 11 to 16V supplied from an external power source (car's on-board power system) - optionally, by built-in battery;
- prevent accidental user actions through the system of selected action confirmation.

Basic characteristics:

Parameter, measuring unit	Value
Infusion Rate setting range (in increments of 0.1 ml/h), ml/h	0,1 – 1500
Infused Volume setting range (in increments of 0.1 ml), ml	0,1 – 999,9
Infusion Time range	1 min. up to 99 hours 59 min.
Bolus Infusion Rate setting range, ml/h	1 – 1500
Bolus Infused Volume setting range, ml	0,1 – 25
Electrical power supply	
50 Hz AC mains power supply, V	230±23
Built-in power source (battery) supply voltage, V	12
Car onboard network power supply voltage, V	11 up to 16 with DC/AC transducer (option)
Physical specifications:	
Overall dimensions, mm	400x200x190
Max. weight, kg	2,8

INTEGRAL

The "INTEGRAL KBE" hospital beds: The INTEGRAL KBE-P hospital bed (for patient's rooms), The INTEGRAL KBE-R hospital bed (for resuscitation /intensive care rooms)

TU BY 100386629.148-2010 rev. «1».
Registration Certificate of the Ministry of Health of the Republic of Belarus № IM-7.97168/1511

KBE-R hospital ward bed – resuscitation /intensive care room bed, four-section, with electromechanical adjustment of sections position and bedding height, designed to care for patients in the resuscitation /intensive care departments.

KBE-P hospital ward bed – patient's room bed, four-section, with electromechanical adjustment of sections position and bedding height, designed to care for patients in the medical wards/ internal medicine departments.

Technical characteristics:

Parameter, measuring unit	KBE-R	KBE-P
Dimensions, mm	2100 x 1020	2100 x 1020
Elongation ability, mm	up to 200	up to 200
The minimum height of bed lifting, mm	500	500
The maximum height of bed lifting, mm	730	730
The maximum load capacity, kg	210	210
Tilt angle of the back support, deg.	0-85	0-85
Tilt angle of the thigh support, deg.	0-35	0-35
Tilt angle of the lower leg (surae) rest, deg.	15	15
Trendelenburg angle, deg.	0-15	0-15
Anti-Trendelenburg angle, deg.	0-15	0-15
Hand control/switchboard for a patient's use, pcs.	1	1
Hand control /switchboard for the medical staff, pcs.	1	1
Alternate power supply unit, pcs.	1	1
Side safety guards, pcs.	2	not available
Headboard (front end backrest for the head)	Removable	Fixed
Radiotransparent base of the back rest	available	not available
The X-ray cassette	available	not available
Casters diameter, mm	125	125
Urine-collecting bag holder	available	available
Drip bulbs holder	available	available
Bed-pan holder	available	available

Additional component parts:

Parameter, measuring unit	KBE-R	KBE-P
Holder/stand for infusions	1	1
Frame-rail for lifting the patient up	«goose» type	«goose» type
General-purpose table (for injections)	1	1
Balkan frame	1	1
Mattress	1	1
Anti-decubitus (pressure reducing) system	1	1
Basket for the drain bottle	1	1

INTEGRAL

The "INTEGRAL KBM-01" hospital bed:

TU BY 100386629.096-2009 rev.«2»
Registration Certificate of the Ministry of Health of the Republic of Belarus № IM - 7.95447/1505

The INTEGRAL KBM-01 hospital bed is a mechanical, four-section bed with manual adjustment of sections position and Trendelenburg angles. It provides comfortable conditions for patient's relaxation during his stay in hospital and in the course of medical procedures. The bed has side safety guards, frame-handrails, general purpose table, drip bulbs holder and urine-collecting bag holder. Optionally can be equipped with the tunnel for X-ray cassette, bed-pan holder, etc.

Technical characteristics:

Parameter, measuring unit	Value
Length of the bed, mm, max	2115
Width of the bed, mm, max	1080
Height of the bed (without stand), mm, max	1150
Height from the floor to the mattress, mm, max	640
Load capacity of the bedding, kg, max	170
Tilt angle of the back support, deg.	0-85
Tilt angle of the thigh support, deg.	0-30
Tilt angle of the lower leg (surae) rest, deg.	0-15
Trendelenburg angle, deg.	0-15
Anti-Trendelenburg angle, deg.	0-15
Side safety guards	available
Drip bulb holder/stand	available
Urine-collecting bag holder	available
Stand-alone table for injections	1
Frame-handrail	available
Max. weight of the bed, kg	175

Additional component parts:

Parameter, measuring unit	Value
Holder/stand for infusions	1
Frame-handrail for the patient lifting up	«goose» type
General-purpose table (for injections)	1
Mattress	1
Balkan frame	1
Basket for the drain bottle	1

INTEGRAL

The "MALYSHKA" neonatal therapy table

TU BY 100386629.067-2008 rev.«1»
Registration Certificate of the Ministry of Health of the Republic of Belarus № IM - 7.94669/1408
Registration Certificate (Russian Federation): RZN 2015/2429

Therapy table is intended for use in children's hospitals. The table provides comfortable conditions for medical procedures with newborns and infants, including physical examination, diagnostic procedures, sanitary and medical treatment, phototherapy, massage, diapering and dressing a child.

Basic parameters:

Parameter, measuring unit	Value
Mattress sizes, mm, max	640x720
Height from the floor to the mattress, mm, max	935±20
Bedding surface temperature range, C°	25-38
Load capacity of the bedding, kg, max	25
Recovery time, minutes, max	30
Mean time between failures, hours, min	2000
Power voltage, V	230
Frequency, Hz	50
Weight, kg, max	55
Overall dimensions (without mounted trays), mm	
Length	770±20
Width	700±20
Height	1900±50

INTEGRAL

The "SASHENKA" functional neonatal bed with a transparent plastic bath cuvet

TU BY 100386629.108-2009 rev.«1»
Registration Certificate of the Ministry of Health of the Republic of Belarus № IM -7.95539/1409

Functional bed for the newborn children with a bath-cuvet made of transparent plastic is designed for the maternity units and children's wards of maternity centers, hospitals, medical feldsher-midwife stations. The bed creates ideal conditions for a mother and the medical staff in relation to nursing the newborns. Highly elevated bath-cuvet makes it possible to place the bed above mother's ward bed which greatly facilitates mother's access to her child.

Technicalcharacteristics:

- The bed frame is made of steel tube and is covered with polymeric powderpaintresistanttomultipletreatmentsbydisinfectants.
- The bed has 4 Ø100 mm self-aligned wheel casters, two of which areequipped with individual brakes.
- The bath-cuvet of the bed is made of transparent Plexiglas and is equipped with a pocket for a name tag of the baby.
- The mattress is made of 50 mm thick foam and is placed in a removablecover from a waterproof fabric.
- The cart has a tilt angle adjustable within ± 12 degrees (tilt angles mayoptionallybeincreased).

Basic parameters:

Parameter, measuring unit	Value
Overall dimensions of the bed, mm, max:	
Length	900
Width	550
Height	1030
Overall dimensions of the bath-cuvet, mm, max:	
Length	745
Width	490
Height	245
Overall dimensions of the mattress, mm, max:	
Length	630
Width	390
Height	40
Bath-cuvet tilt angle adjusts, deg.:	
Trendelenburg	12
Anti-Trendelenburg	12
Max. weight of the bed, kg	15
Load-carrying capability, kg, max	15

INTEGRAL

The "INTEGARL CAM" wheelbarrow

TU BY 100386629.173 – 2014
Registration Certificate of the Ministry of Health of the Republic of Belarus № IM -7.101936

Purposed at patients' transportation and nursing in the departments of health care facilities, including Resuscitation and Intensive Care Divisions.

Adjustment of the lifting height of the bed, the Trendelenburg and anti-Trendelenburg positions of the wheelchair and the operation of the drives is carried out by hand control.

Power is supplied to the wheelchair by a self-contained (built-in) power supply source (+ 24V battery). To charge the battery the wheelchair should be connected to 230 V/50 Hz AC mains.

Technical characteristics:

Parameter, measuring unit	Value
Height adjustment of the wheelbarrow lying (from the floor level), mm	500 up to 900
Tilt angle of the back support section, deg.	0 up to 70
Tilt angles of the thigh and the lower leg (surae) support sections, deg.	0 up to 20
Trendelenburg position, deg.	0 up to 10
Anti Trendelenburg position, deg.	0 up to 10
Power consumption with a battery in charge, W (max.)	140
Overall dimensions, mm (max.)	2100 x 750
Weight, kg (max.)	110

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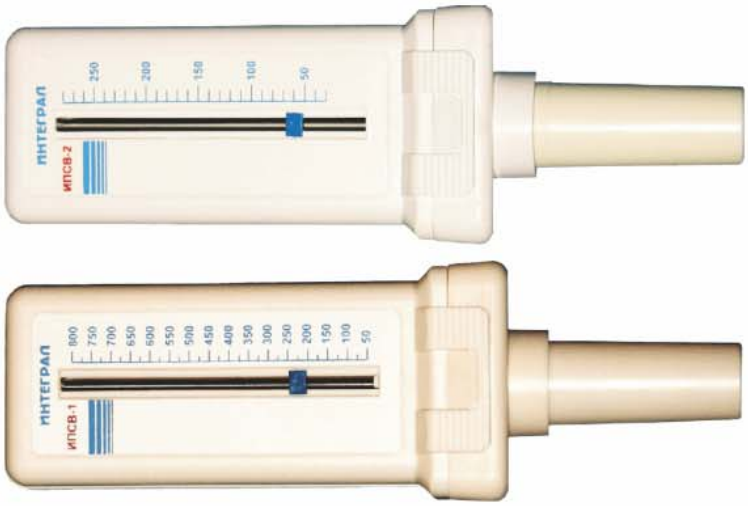
INTEGRAL

Peak expiratory flow rate indicators (peak flow meters)

TU RB 37409416.005-99 rev. «6»
Registration Certificate of the Ministry of Health of the Republic of Belarus № IM -7.3117/1502



Peak expiratory flow rate indicators are designed for a relative indication of peak flow rates of air exhaled by a person. Indicators are used for everyday at-home application by patients with lung diseases. With this device patients can organize self-control over the disease and apply for a timely consultation of a physician. Indicators are manufactured in two versions: for adults (IPSV-1) and for children (IPSV-2). Each unit is equipped with a removable mouthpiece that can be ordered separately. Indications of peak expiratory flow rate are determined by the shift of the cursor (pointer) on the indicator scale.

Basic technical data and characteristics:

Parameter, measuring unit	IPSV-1 (for adults)	IPSV-2 (for children)
Type of the device	Mechanical Volumetrical	Mechanical Volumetrical
Indicating range, l/min	100-800 ±10%	50-250 ±10%
Scale interval	25	5
Mouth piece inner diameter, minimum, mm	16	16
Overall dimensions, (length x width x height), mm	186 x 61 x 38,2	186 x 61 x 38,2
Weight, g	70 ± 10	70 ± 10
Lifetime, minimum, years	3	3

INTEGRAL

The "INTEGRAL TE-04" electronic digital thermometer

TU RB 100024593.035-2004 rev. «3»
Registration Certificate of the Ministry of Health of the Republic of Belarus № IM -7.4716/1412

"INTEGRAL TE-04" electronic digital thermometer (hereinafter - the thermometer) is designed to measure human body temperature at home and in medical centers/health care facilities and institutions.

Basic technical data:

Readings of the measured temperature are displayed on a five-digit liquid crystal display in a digital form.
The thermometer provides the following functions:
Measurement and indication of the human body temperature within the range from 32,00 to 42,00°C in increments of 0,01°;
Performance efficiency automatic testing;
Memory storage of the last value of temperature measured;
Temperature measurement mode turn ON /OFF by pressing the control button;
Automatic shutdown in the event that thermometer has not been used within max. 30 minutes;
Audible indication tripping when thermometer is switched ON /OFF and when the temperature measurement is complete;
Battery discharge indication;
Indication of the measured temperature in Celsius or Fahrenheit degrees (as a reference value).
Temperature absolute measurement error is ± 0,10 °C in a temperature range of 32,0 to 42,0 ° C inclusive.
Power-operated working time of the thermometer (battery life) - 2 years minimum.
Weight of the thermometer - 20g. maximum.
Overall dimensions - 121,6 x 17,2 x 6,9 mm.

The thermometer is functional when exposed to:
Ambient temperature of 10 to 50 ° C;
Excessive air humidity up to 98% at 35 °C.

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"Kamerton" Branch of "INTEGRAL" JSC - "INTEGRAL" Holding Managing Company

INTEGRAL

The "IAD - 05" arterial blood pressure meter (sphygmomanometer)

TU BY №100386629.161-2010 rev. «2».
Registration Certificate of the Ministry of Health of the Republic of Belarus № IM -7.97328/1601

The IDA-05 arterial blood pressure meter is designed for non-invasive measurement of systolic blood pressure and diastolic blood pressure (BP) on the brachial artery based on oscillometric method and for the pulse rate measuring.
The device is intended for use in hospitals and individual use.
The voice interface for the audio announcement of the results makes it possible for the blind and visually impaired people to use this device.
Measuring mode:
Single;
Three-times measuring with calculation of the mean value of results measured with an interval of 20 seconds;
Auscultation (based on the Korotkov method using a stethoscope).
Delivery set consists of: "IDA-05", two cuffs of M-size (24-35cm) and L-size (32-44 cm), mains adapter and AA / LR6 batteries- 4 pcs.

Technical characteristics:

Parameter, measuring unit	Value
Weight with battery (without a cuff), g	500
Size (without a cuff), mm	147 x 105 x 80
Measuring method	Oscillometric method, Korotkov's sounds method
Pressure Range, mmHg.	20 - 280
Pulse range, bpm	40 - 199
Resolution, mmHg.	1
Measuring range of diastolic blood pressure, mmHg.	25-195
The maximal inflation pressure, mmHg.	280
Pressure measurement absolute error limit, mmHg.	±3
Amount of memory	864 (indicating date and time)
Power supply unit:	
Batteries (4 pcs.)	AA/ 1,5 V
or mains adapter	DC +6V / 1A

INTEGRAL

The "OBN-150K" bactericidal irradiator, wall-mount

TU BY 100386629.160-2010 rev. «1»
Registration Certificate of the Ministry of Health of the Republic of Belarus
№ IM -7.97151/1601

The irradiator shall be used for disinfection of air and surfaces of the facilities in hospitals, clinics, medical and preventive, industrial and public institutions being an effective means for prevention and control of the airborne infections. The irradiator has a combined design with an open and a shielded lamp. Open lamp can be used only in the areas free of people for fast disinfection of air. Shielded lamp, which irradiates the upper layers of the air, can be used indoors in the presence of people. The lower layers are disinfected by convection with the shielded lamp used. Separate switch to be installed on the open lamp.

Technical characteristics:

Parameter, measuring unit	Value
Source of irradiation	Bactericidal lamp TUV 30W
The number of radiation sources, pcs.,	2
including shielded ones	1
Summary bactericidal radiation flow of the lamps, W	20
Irradiation at 1m distance, W/m^2	1,25
Bactericidal flow utilization factor	0,48
Power voltage, V	230 ± 23
Frequency, Hz	50 ± 0,5
Consumption power, W	100
Overall dimensions, mm, max.	920 x 80 x 175
Weight, kg, max	5
Average service lifetime, years	5

INTEGRAL

The "OBP-450K" bactericidal irradiator, portable
The "OBP-450K" movable bactericidal irradiator

TU BY 100386629.160-2010 rev. «1»
Registration Certificate of the Ministry of Health of the Republic of Belarus
№ IM -7.97151/1601

The irradiator is designed for fast disinfection of indoor air, where the use of wall or ceiling-mount type irradiators is unfeasible or inefficient. Due to its design and easy handling/movement, it is recommended for the successive disinfection of several rooms as well as for application in health care institutions of the large area and for at-home application as a UV bactericidal irradiator based on a bactericidal lamp. The movable irradiator is equipped with open lamps and can be used in the areas free of people for fast disinfection of air.

Technical characteristics:

Parameter, measuring unit	Value
Source of radiation	Bactericidal lamp TUV 30W
The number of radiation sources, pcs.	6
Summary bactericidal radiation flow of the lamps, W	60
Irradiation at 1m distance, W/m^2	2,5
Bactericidal flow utilization factor	0,9
Power voltage, V	230 ±10 %
Frequency, Hz	50
Consumption power, W	300
Overall dimensions, mm, max.	660 x 1800
Weight, kg, max	14
Service lifetime, years	5

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INTEGRAL

Electronic Thermometer IC

Part	Function	Features	Pads
Iz8016	100° Digital thermometer °C/°F	Measurement temperature range: from -50°C to +50°C (from -58°F to +122°F) Resolution: 0.2°C (°F) Accuracy: ±1°C (°F) Supply voltage 1.5V Measurement cycle 1, 3, 5 & 10 seconds (on default– 10 seconds) Measuring RC-oscilator with external resistor & capacitor 32 kHz clock RC-oscilator with build-in capacity Serial interface Build-in circuit of non-linear digital correction 3.5 digit LCD with double multiplex	36
Iz8005	Medical thermometer	Supply voltage 1.5V Measurement temperature range: from +32.00°C to+43.00°C Accuracy: ±0.1°C Resolution: 0.01°C Selftesting Alarm signal Storage of measurements results (highest temperature) Automatic switch-off after 8 min 40 sec One button on/off switching	37

INTEGRAL

Electronic Thermometer IC

Part	Function	Features	Pads
Iz8071	Digital medical thermometer	Measurement temperature range: from 32 to 42°C (from 89.6 to 107.6°F) Measurement accuracy: ±0.05°C – for range from 35 to 38°C, ±0.1°C – for ranges from 32 to 35°C & from 38°C to 42°C Resolution: 0.0025°C RC-oscillator with own frequency 32.32kHz (external resistance) with adjustment function Build-in LCD driver circuit 3COM x 11SEG, 1/3 duty, 1/2 bias	42
IN18B20D IN18B20	Integrated circuit of digital sensormeasurer of temperature for industrial temperature range	Measurement temperature range: from -55°C to +125°C Temperature value is converted to 12-bit digital code Accuracy of temperature indication can be programmed by customer form 9 to 12 bit Alarm signal for case of temperature excess of threshold values determined (programmed) by customer Unique 64-bit serial number for each IC, not available for changes by customer Data read/write operation from memory of IC, 1-wire interface of data transfer	SO-8 TO-92

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