

ASPEL

LET'S TALK TO THE HEART

ECG ELECTROCARDIOGRAPHS

ECG HOLLERS

STRESS TEST SYSTEMS

REHABILITATION SYSTEMS

BLOOD PRESSURE MONITOR

ERGOSPIROMETRY

SPIROMETRY



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ASPEL



TECHNOLOGY



QUALITY



INNOVATIONS

**PRODUCT
CATALOGUE**
2019/2020



- Visualisation of 1, 3, 6 or 12 ECG waveforms, analysis results and interpretations, examinations stored in memory.
- Print out in 1, 3, 6 or 12 ECG waveforms mode.
- Types of examinations: manual, auto, spiro, automatic to clipboard, automanual, long.
- Printer: on 112 mm wide paper or on an external PCL5 or PCL6 printer.
- Device adapted for a direct open-heart examination.
- Database: 1000 patients or 1000 examinations.
- Storing an examination in memory in LONG mode (1-15 minutes).
- Up to 130 automatic examinations in battery operating mode.
- INOP detection of electrode unclamping, independent for each channel.
- Examination export to USB memory, onto email address and other device via ECG-MAIL service.
- Wire communication with LAN or Internet.
- Archiving of examinations in a given period on an external medium (USB memory).



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- Examination export to USB memory, onto email address and other device via ECG-MAIL service.
- Wire communication with LAN or Internet.
- Archiving of examinations in a given period on an external medium (USB memory).
- Wireless communication via WiFi.
- Execution of orders in HL7 standard through compatibility with hospital systems.

ECG ELECTROCARDIOGRAPHS: ASCARD GREY

AsCARD electrocardiograph - Reliable 12-channel electrocardiograph with a large touch screen and a database of 1000 tests. Stands out the option of connecting a spirometry attachment, examination record to a USB stick and send the test to e-mail or another camera ECG. The test is recorded in manual, automatic or AUTOMANUAL. 12-channel electrocardiograph with unique on solution enabling sending medical records and ECG records to any email or other inbox ECG device. Cooperation with Ethernet and Internet networks allows for connecting the camera to the IT system of service outlets health and access to completely free telemedicine functions.

ASCARD GREY SYSTEM

USB LAN



- Display on the screen: 1, 3, 6 or 12 ECG leads, results analysis and interpretation, research stored in memory.
- Print mode: 1, 3, 6 or 12 ECG leads.
- Types of tests: manual, Auto, Spiro, automatic to the clipboard, Automanual and Long.
- Printer: built-in or external PCL5 / PCL6 port.
- Memory: 1000 patients or 1000 tests.
- Open-heart work: Yes.
- Long test recording: in the memory from 1 minute to 15 minutes.
- Battery: up to 130 automated tests.
- Detection of electrode detachment: INOP independent for each channel.
- Export of tests: to a USB stick, to an e-mail account or to another camera using the EKG-MAIL service.
- Wired communication: LAN or Internet.
- Available in version with Gray 07.205, 305 and 305P

ASCARD ORANGE v.07.105

USB



- Display on the screen: 12 ECG leads, results analysis and interpretation, research stored in memory.
- Print mode: 1, 3, 6 or 12 ECG leads.
- Types of tests: manual, Auto, automatic to the clipboard.
- Printer: built-in or external PCL5 / PCL6 port.
- Memory: 1000 patients or 1000 tests.
- Open-heart work: Yes.
- Detection and presentation of stimulus pulses.
- Continuous measurement of heart rate (HR).
- Alphanumeric membrane keyboard.

- Adjustable length of automatic test recording: from 6 to 30 seconds.
- Battery: up to 130 automated tests.
- Detection of electrode detachment: INOP independent for each channel.
- Examination export: to USB stick.

ECG ELECTROCARDIOGRAPHS: GREY SYSTEM & ORANGE

AsCARD Gray System - Mobile set for resting ECG tests, which consists of AsCARD Gray, medical trolley and laser printer external. AsCARD Gray is a 12-channel electrocardiograph dedicated to healthcare facilities that are open to medical improvement resulting from the application of new technologies.

AsCARD Orange - is a 1, 3, 6, 12 channel enabling device performing an electrocardiogram in the full range of 12 leads. It is intended for adult and pediatric ECG tests patients in all health care facilities by trained staff. Test recording is carried out in manual or automatic mode with the possibility of performing analysis and interpretation. The camera can be powered from a 100V - 240V network or from an internal battery.

ASCARD GREEN v.06.101

USB LCD
COLOR



- Registration of 12 standard ECG leads.
- Print mode: 1, 3, 6 or 12 ECG leads.
- Color LCD display.
- Automatic analysis and interpretation - interpretation results depending on the age and sex of the patient.
- Communication with a PC via an external USB port.
- Battery: up to 130 automated tests.
- Automatic detection of QRS complexes.
- Open-heart work: Yes.
- Print thickness: normal or bold.

ASCARD GREEN v.05.101

USB LCD
BLACK



- Registration of 12 standard ECG leads.
- Print mode: 1, 3, 6 or 12 ECG leads.
- Monochrome display.
- Automatic analysis and interpretation - interpretation results depending on the age and sex of the patient.
- Communication with a PC via an external USB port.
- Battery: up to 130 automated tests.
- Automatic detection of QRS complexes.
- Open-heart work: Yes.
- Print thickness: normal or bold.

ASCARD MRCORAL v.201A

USB



- Data transmission via USB port.
- On-line ECG recording of 1, 3, 6 and 12-channel ECGs on computer monitor.
- Generating research in pdf format.
- Test recording to USB stick.
- Submission of study records by email.
- Registration in manual and automatic mode.
- Possibility of manual performance of amplitude-time measurements.

ECG ELECTROCARDIOGRAPHS: GREEN & MRCORAL

AsCARD Green - Low weight, small size, communication with a computer and an internal patient and research database are the most important features of this 3-channel ECG apparatus built using technology microprocessor. It enables full range testing 12 leads and is equipped with an automatic analysis and interpretation module.

Mr Coral - A portable 12-channel digital electrocardiograph that connects is via a USB port to a computer with CardioTEKA software. The camera enables ECG testing in the full range of 12 leads.

ASPEKT 712 v.201



- Registration: 3 or 12 ECG leads.
- ECG signal recording: 24h, 48h or 7 days.
- ECG waveform view: wireless communication.
- Detection of the disconnected electrode: in configuration mode.
- Data storage: microSDHC card.
- Viewing patient data: yes.
- Operating mode: Optimal 250 Hz, Extended 2000 Hz.
- Recorder status: three-color diode, sound signaling.
- Signaling: damaged microSDHC card, low battery, INOP.
- Registration start: event button or automatically after 10 minutes.
- Starting registration wirelessly: HoICARD 24W software or program ASPEKT Configurator.
- Isoline filter: 0.05 Hz.
- Battery saving function: yes
- Cooperation with the software: HoICARD 24W.
- Available in version: recorder or recorder with software.

ASPEKT 712 v.301

OLED



- Registration: 3 or 12 ECG leads.
- ECG signal recording: 24h, 48h or 7 days.
- ECG waveform view: wireless communication.
- Detection of the disconnected electrode: in configuration mode.
- Data storage: microSDHC card.
- Viewing patient data: yes.
- Operating mode: Optimal 250 Hz, Extended 2000 Hz.
- Recorder status: three-color diode, sound signaling.
- Signaling: damaged microSDHC card, low battery, INOP.
- Registration start: event button or automatically after 10 minutes.
- Starting registration wirelessly: HoICARD 24W software or program ASPEKT Configurator.
- Isoline filter: 0.05 Hz.
- Battery saving function: yes
- Cooperation with the software: HoICARD 24W.
- Keyboard: touchscreen with function buttons.
- Display: OLED.
- Available in version: recorder or recorder with software.

ECG HOLLERS: ASPEKT

The AsPEKT recorder is a digital device with battery power supply intended for registration and saving to the microSDHC card 12-lead and 3-lead ECG method Holter (with 10, 7 and 4 electrodes) for a period of 24 hours, 48 hours or 7 days. The recorded ECG tests are read and analyzed by 24W HoICARD software. The recorder has the option to register stimulation and two types of events. The recorder is equipped with a color display and a capacitive keyboard enabling initial recorder configuration and ECG signal quality preview.



- Excellent ECG waveform quality thanks to the use of digital filters to eliminate line swimming isoelectric and muscular origin disruptions.
- Uninterrupted recording and presentation of the ECG signal from 12 leads.
- Presentation of averaged P-QRS-T units with 12 leads along with the results of level and slope measurements of the ST segment.
- Automatic measurement of HR, ST level and ST segment slope.
- Automatic cycloergometer and treadmill load control.
- Archiving and printing of a test report.
- Automatic determination of measuring points with the possibility of manual correction.
- Automatic arrhythmia analysis.
- Presentation of parameters regarding: test phase, current load, stage time and total time effort.
- Monitored parameters: rhythm frequency, MET, dual product, blood pressure, level, segment slope ST and load.
- ECG printout in real time.
- Trend preview of all measured parameters during the test.
- Alarm system for monitored parameters and arrhythmias.
- Automatic blood pressure measurement option.
- Archiving and printing of a report enabling reliable assessment of the study.
- Standard test reports and the ability to define your own reports also in RAMP mode.
- Preview of the report on the screen before printing the report.
- Reanalysis function of the performed test.
- Presentation of 3D trends illustrating changes in the ST segment.
- **Cooperation with: B612 treadmill and CRG200 cycloergometer.**

STRESS TEST SYSTEMS: CARDIOTEST

CardioTEST Beta System XL v.140 - diagnostic stand, enables performing electrocardiographic exercise and classic tests resting tests. It allows you to view, describe, generate reports and archive studies ECG. Works with the B612 treadmill - model C and CRG 200 cycloergometer.



- Belt speed: from 0 km / h to 20 km / h.
- Tilt angle: from 0% to 25%.
- Usable field of the tape: length 1300 mm, width 500 mm.
- Safety switch: bolted, stops the belt.
- Tilt control system: yes.
- Additional functions: ZERO START function.
- Computer control: RS-232 port.
- Maximum patient weight: 180 kg.
- Power supply: 230 V / 50 Hz.
- Dimensions: 2000x830x1250mm (LxWxH).
- **Cooperation:** CardioTEST Stress Test System, AsTER Cardiological Rehabilitation System or Cardio TEST CPET Ergospirometry.

Built-in ECG module, parameters:

- 12 standard leads in diagnostic mode.
- 2 leads in training mode.
- Sensitivity 2.5 / 5/10/20 mm / mV.
- Travel: 25/50/100 mm / s.
- Digital filters 25 Hz, 35 Hz, 50 Hz, anti-drift filter.
- Digital isoelectric line filter.

STRESS TEST SYSTEMS: TREADMILL B612

The technologically advanced B612 treadmill enables running exercise tests and effective and safe cardiological rehabilitation. The stable construction of the treadmill ensures many years of operation. As one of the few available on the market, the B612 treadmill is innovative solution in the form of an embedded ECG module. Control system slope allows precise setting of the load by changing incline of the treadmill. In addition, three safety switches - including one external, increase patient safety and increase control over treadmill work. The B612 treadmill is designed to work together with a testing system CardioTEST effort and with a rehabilitation system cardiological AsTER.

ASTER BETA SYSTEM XL v.140



- Various training programs controlled by load or rhythm.
- Continuous or alternating load control.
- Designing individual training programs in graphic mode.
- Monitoring of two ECG leads and rhythm frequency.
- Presentation of load trends, rhythm frequency and blood pressure.
- Patient database and their research.
- Archiving of the examination and ECG recording.
- Review of ECG reports and ECG waveforms from previous workouts.
- Conducting group trainings.
- Printout of reports illustrating the course of training.
- ECG print function.
- Possibility of electrocardiographic exercise test.
- **Cooperation with: B612 treadmill and CRG200 cycloergometer.**
- **Awarded the Golden Aesculapius MTP award at the International Salon Medical SALMED.**

CYCLOERGOMETER CRG200 v.501

COM
PORT

MICRO
BRAKE

ECG
MODUL



- Computer control via RS-232 port.
- Braking: processor controlled brake.
- Load range: 25 - 1000 W.
- Rotation range: 20 - 150 rpm.
- Load independent of speed.
- Maximum patient weight 200 kg.
- Power supply: 230 V, 50 Hz, 60VA.
- Dimensions: (LxWxH) 1190x600x1370 mm.
- **Cooperation: CardioTEST Stress Test System, AsTER Cardiological Rehabilitation System or Cardio TEST CPET Ergospirometry.**

Built-in ECG module, parameters:

- 12 standard leads in diagnostic mode.
- 2 leads in training mode.
- Sensitivity 2.5 / 5/10/20 mm / mV.
- Travel: 25/50/100 mm / s.
- Digital filters 25 Hz, 35 Hz, 50 Hz, anti-drift filter.
- Digital isoelectric line filter.
- Measuring range HR 15-240 bpm.

REHABILITATION SYSTEMS: ASTER BETA SYSTEM

A multi-user system designed for conducting rehabilitation monitored training cooperating with B612 treadmills and / or with CRG 200 cycloergometers. Each training position is treated individually. Training programs allow you to conduct workouts controlled by load or rhythm. After training for a report is generated for each position. In addition, the AsTER system is equipped with a fitness assessment module that allows you to perform an electrocardiographic exercise test to assess the course of rehabilitation.

ASPEL 308 ABPM v.101

SAVE
SAFE

START
EASY

POWER
USB

MEMO
CARE



- Measured pressure range 0 to 300 mm Hg (relative to atmospheric pressure).
- Automatic pressure adjustment.
- Measurement on demand - START EASY button.
- Power supply: 4 x AA batteries or accumulators (up to a week work or 500 tests).
- Exam results: systolic, diastolic, mean and HR pressure.
- Unlimited storage time.
- Internal real time clock.
- LCD character display, direct reading of the last one research.
- Signaling the decrease of battery voltage.
- Function keyboard.

- External USB socket for communication with a PC via a USB cable.
- Recorder dimensions: 90 x 36 x 93 mm.

ASSPIRO D200 v.302

USB

LAN



- Color TFT LCD graphic display with panel touch and LED backlight.
- Full alphanumeric and function keyboard.
- Built-in 112mm thermal printer with EASY - LOAD paper loading system.
- Built-in LI - ION battery.
- An easy-to-use patient database with 1000 test memory.
- Possibility to review tests from the base on the screen of the apparatus (table and charts).
- Research and measured parameters: life capacity, forced inspiratory and expiratory vital capacity, maximum ventilation of any type.
- Comparative PRE / POST studies after drug administration.
- Possibility of performing combined VC + FVC tests.

- Presentation of curves on the screen online (in real time).
- Built-in sensor: temperature, pressure, humidity for BTPS correction.
- Automatic BTPS correction.
- Automatic selection of the best curve with the possibility of manual changes.
- Automatic evaluation of test repeatability according to the A - E scale for FVC and FEV1.
- Graphic signaling of forced expiration time.
- Acoustic and graphic signaling of obtaining curve flattening.
- Standard (normative) values according to ECCS / ERS.
- Calculation of the number of standard deviations (SR) and percentiles.
- Immediate readiness for work after changing the head.

BLOOD PRESSURE MONITOR: 308 ABPM

Long-term blood pressure recorder. ASPEL 308 ABPM blood pressure recorder is intended for use in hospitals, outpatient centers and specialist surgeries. It enables the recording of blood pressure by the oscillometric method. Recorder has an LCD display enabling direct reading of the last test. Low weight and small dimensions make the recorder an ergonomic device.

SPIROMETRY: ASSPIRO

Compact, portable spirometer enabling diagnostic tests of respiratory system of adult and pediatric patients in all health care facilities by trained employees. It is equipped with GPK17 pneumotachometric head, PP17 air tube, KP16 nose clip and paper for spirometer R112BN. The camera can be powered from a 90V - 260V network or from an internal battery. The device requires periodic calibration using a spirometric SSK03 calibration syringe.



- Possibility of performing an ergospirometry test with using a CRG 200 cycloergometer or B612 treadmill with observation and recording ECG waveforms from 12 leads, continuous measurement and imaging on parameter charts tract.
- Load control of the CRG 200 cycloergometer and B612 treadmill according to standard test protocols exercise. The ability to define your own protocols.
- Presentation of the calculated parameters of the recorded signal ECG during exercise tests on the monitor screen: rhythm HR heart rate, ST level and slope for everyone leads, MET value and number of stimulations VE / minute, cardiac arrhythmias detected.
- Automatic BTPS correction.
- Monitoring of calculated parameters during ergospirometry testing.
- Phases of the ergospirometric study: observation - stabilization parameters, measurement and recording of resting parameters, exercise phase, recovery phase.
- Determination of ventilation thresholds.
- Presentation of the ECG recording in several different modes.
- Presentation of ECG analysis results in the form of trends, histograms, three-dimensional (3D) charts.
- Signaling of exceeded parameters (rhythm frequency, ST level).
- Signaling detection of ventricular arrhythmias.
- Quick and easy change of ECG presentation parameters (shift, gain).
- Several types of filters to eliminate ECG interference (digital filters).
- The software can be configured depending on the user's requirements.
- The ability to compare changes in the shape of the ECG curve.
- Defining your own exercise test protocols.
- The ability to register resting ECG records.
- ECG signal and test reports on a laser printer attached to the system.
- Imaging of trends VO₂, VCO₂, WR, HR, VE, VE / VCO₂, O₂ pulse, RER.
- Calibration of flow and O₂ and CO₂ content.
- Manual analysis and interpretation of data in a set of 9 trends according to Wasserman charts.
- Patient magazine with their personal data and tests.
- Full archiving of tests performed and the ability to view them from the archive.
- Power supply: AC 230V +/- 10% (50Hz).
- Dimensions: 1355x780x750mm (LxWxH).
- Masa z wyposażeniem: 75 kg.
- Flow measurement range: $\pm 18 \text{ l/s}$ (BTPS).
- Accuracy of flow measurement: $\pm 5\%$ or $\pm 0.2 \text{ l/s}$.
- Volume measuring range: $0.5 \div 8 \text{ l}$.
- Accuracy of volume measurement: $\pm 3\%$ or $\pm 0.05 \text{ l}$.



ERGOSPIROMETRY: CARDIOTEST CPET

Diagnostic system designed for standard performance electrocardiographic exercise tests together with a direct assessment of performance (VO₂ ocen) and assessment of the respiratory system and muscle metabolism based on measurements of flow and concentration of exhaust gases: oxygen and carbon dioxide.

Works with the B612 treadmill - model C and CRG 200 cycloergometer.



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