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*Simulator for laparoscopic surgery*

*Simulator for Arthroscopic surgery*

*Simulator for infant patient critical care*

*Simulator for vascular procedures*

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## Contents

Epona Medical simulation products catalog 01 .....	1
Contents .....	2
<b>Simulators for laparoscopic surgery .....</b>	<b>4</b>
LAP-X box.....	5
LAP-X box pro.....	6
LAP-X VR.....	8
LAP-X HYBRID .....	12
<b>Simulators for arthroscopy.....</b>	<b>14</b>
ARTHRO-X.....	15
<b>Simulators for infant patient critical care .....</b>	<b>17</b>
NENA Sim:.....	17
<b>Simulators for cardiovascular.....</b>	<b>18</b>
CATH-X.....	18
CATH-X RHC:.....	22

## **About the company**

Epona Medical is a Dutch company located in the heart of Rotterdam, the Netherlands, manufacturing and marketing cutting-edge medical training simulator and health care learning material.

Since the establishment of Epona Medical in April 2010, the company has been working with a number of experts to produce the finest educational materials for medical professionals. It is Epona Medical's vision to become the premier supplier of educational materials to hospital skills centers in the world.

Epona Medical's products have been well received by healthcare professionals worldwide, because of the innovative design, supreme quality and impressive customer service. It is the aim of the company to make simulation based training more accessible and affordable to all hospitals in order to minimize the number of mistakes made during operations/diagnostics and increase the patient recovery time as well as the chance of patient survival.



# Simulators for laparoscopic surgery

# LAP BOX



### **Product Description:**

LAP-X BOX works as a traditional box trainer with a recording software package, including database to register different users.

### **Package content:**

- 2 Controllers (left and right controller)
- 1 Foot pedal
- One HD camera (1920 x 1080) with auto focus and low light support, powered by USB (2.0, 3.0)
- 1 Table unit to place different tasks for the training
- Carrying case (60x55x18 cm) (WxDxH)
- 2 Bbraun Aseculap lap instruments. These instruments can be replaced by any 5mm or 10mm lap instruments.
- LAP-X BOX software package (with recording, administration and database functions)
- Hardware support and guarantee (1 year)
- Software license and support (1 year): free updates and upgrades during licensed period.

### **Benefit at a glance:**

- Small, light, portable, easy to carry and set up.
- Trainees' performance can be recorded for later assessment by the educators
- Real haptics which result in more realistic and more sufficient training for tasks that are unrealistically simulated in virtual reality environment such as: knot tying, suturing, needle handling...
- Administration tool to monitor the training progress of trainees
- Low cost

# LAP BOXPRO



## Product Description:

An innovative box trainer with possibilities of metrics measurement and performance recording.

LAP-X BOX pro software can record the performance of users, measure and provide instant feedbacks (scores) after users' performances. Users' results will be assessed twice. First time by the program: the scores will be compared with the nominal scores set by the professor/ administrator. The second time by our specialist: the professor set the standard performance for each task/exercises which will be the benchmark and provide us a check list. The performance will be remotely assessed accordingly.

## Benefit at a glance:

- Small, light, portable, easy to carry and set up.
- The only box trainer with metrics measurement, motivating trainees with instant feedbacks.
- Real haptics which result in more realistic and more sufficient training for tasks that are unrealistically simulated in virtual reality environment such as: knot tying, suturing, needle handling...
- Trainees' performance can be recorded for later assessment by the educators at their convenience, thus, saving the time they must spend per trainee.
- Administration tool to monitor the training progress of trainees
- Possible to have assessment by a third party (Epona Medical) with checklist provided by the educator.
- Low cost
- Upgradable to LAP-X HYBRID(see descriptions of LAP-X HYBRID below)

## Package content:

- 2 Controllers (left and right controller), connected and powered by USB
- 1 Foot pedal
- One HD camera (1920 x 1080) with auto focus and low light support
- 1 Table unit to place different tasks for the training
- Carrying case (60x55x18 cm) (WxDxH)
- 2 Bbraun Aseculap lap instruments. These instruments can be replaced by any 5mm or 10mm lap instruments.
- LAP-X BOX PRO software package (recording, metrics measurement, feedback, administration and database)
- Hardware support and guarantee (1 year)
- Software license and support (1 year): free updates and upgrades during licensed period.

# LAPX<sup>VR</sup>



## **Product Description:**

LAP-X VR is an innovative virtual reality simulator for motor skills training in a safe environment for different surgical specialties.

LAP-X VR offers you an excellent training aid to standardize, structure, and complement hands-on skills training in surgical residency programs.

LAP-X provides a validated package of 5 curricula of increasing difficulty in virtual reality environment in order to attain proficiency skill levels in all surgical specialties, including general surgery, gynecology, urology, pediatric surgery, and gastrointestinal surgery.

## **Benefit at a glance:**

- Small, light, easy to carry and set up
- Intuitive: Easy to install and understand. The system is self-explanatory and does not require third-party guidance.
- Administration tools for Professors to organize and standardize the training
- Effective educational platform for rule and knowledge training. The platform includes E-learning content, exam questions, personal portfolio, and administration tools for educators that are easily incorporated in each hospital's training program and enable the standardizing of training in a hospital/cluster/region.
- Possibility to connect with satellite hospitals to maintain the training program for trainees. Trainees are able to continue the training at different locations.
- Worldwide competition between users from different hospitals/medical Universities
- Unlimited number of user registration
- Free software update, upgrade and module extension within the license period.
- Possibility to continue training with the system after the license expires.

### Package content:

- 2 Controllers (left and right controller), connected and powered by USB (2.0,3.0)
- 1 Foot pedal
- 2 Bbraun Aseculap lap instruments
- Carrying case (60x55x18 cm) (WxDxH)
- LAP-X VR software package (basic, novice, intermediate, advance, administration tool and database)
- Hardware support and guarantee (1 year)
- Software license and support (1 year): free updates and upgrades during licensed period.

### Training objectives

- Ability to work with both hands simultaneously
- Compensates for the loss of depth perception
- Transfer objects from one instrument to the other bimanually
- Ability to perform tasks under different camera angles via different endoscope insertion points
- Navigate with a 0, 30, or 60 degree scope
- Perform a task with one hand while keeping the instrument in the other hand steady
- Master the Fulcrum effect of the instrument
- Ability to perform during stressful situations
- Surgical procedural knowledge training with the educational platform through the E-learning and exams (in cooperation with the client)
- Surgical procedural training with variety of modules and cases

# LAP X HYBRID



## Product Description

LAP-X HYBRID is a unique simulator that combine the functionality of a virtual reality trainer and a box trainer.

Users can train on virtual reality mode (as LAP-X VR) at different levels: Basic, novice, Intermediate, Advance and switch to box trainer mode (LAP-X BOX pro) anytime (with the benefits of metrics measurement and performance recording). LAP-X HYBRID is the combination of LAP-X BOX pro and LAP-X VR, thus has all the benefits of these two systems.

## Package content

- 2 Controllers (left and right controller), connected and powered by USB (2.0,3.0)
- 1 Foot pedal
- 2 Bbraun Aseculap lap instruments
- One HD camera (1920 x 1080) with auto focus and low light support
- 1 tray unit to place different tasks for the training
- Carrying case (60x55x18 cm) (WxDxH)
- LAP-X HYBRID software package (with a curriculum from basic, novice, intermediate, procedural, recording and measurement, administration and database)
- Hardware support and guarantee (1 year)
- Software license and support (1 year): free updates and upgrades during licensed period.

## Benefits at a glance:

LAP-X hybrid is the combination of LAP-X box pro and LAP-X VR, thus, has all the benefit of these 2 systems.

User can switch between virtual reality training mode and box trainer mode. When used as a box trainer, the instructor can create a new exercise, record his performance as an instruction video to residents and set the nominal score for the exercise. Residents' performance will be assed the first time by the software based on the nominal scores and second time by the instructor at his computer via his admin account. This helps instructors to save a lot times and effort in organizing and managing the training program.

Simulators for arthroscopy

# ARTHROX



## **Product description:**

ARTHRO-X is a virtual reality simulator designed to teach basic arthroscopy skills. It is designed as an arthroscopy box trainer and includes force feedback in order to enhance the experience and training environment to the operator. ARTHRO-X is used to train residents and junior surgeons in basic skills of arthroscopy prior to more advanced surgical orthopedic skills

## **Package content**

- ARTHRO-X hardware
- ARTHRO-X software
- Ergotron mobile work station
- Desktop computer
- Double screen
- 2 year warranty and service

## **Benefits at a glance:**

- ARTHRO-X system includes haptic with force feedback in order to enhance the experience and training environment to the operator
- Each training module offer different options such as different severity and the system measures numerous parameters
- The system is intuitive and self-explanatory, no third party guidance is needed.
- Easy to calibrate
- Available in 2 version: stationery and portable version.
- With stationery version: The height is adjustable between 130 cm and 180 cm in order to make it possible to work both sitting and standing.
- With portable version: small, light (the total system is less than 13 kg), compact design, portable, easy to setup on any table or flat surface.
- The learning curve may be designed in which the operator starts with simple tasks and finish with more difficult tasks.
- Ideal for the training of residents and junior surgeons in basic skill of arthroscopy prior to more advanced surgical skills.

## Training objectives:

- Ability to work with both hands simultaneously
- Ability to perform tasks under different camera angles via different ports
- Navigate with a 30 degree scope
- Perform a task with one hand while keeping the instrument in the other hand steady
- Master the Fulcrum effect of the instrument

Simulators for infant patient critical care

# NENA SIM



## Product description:

NENA Sim is born to complement realistic multidisciplinary team and/or individual baby patient simulation training. Nena Sim offers an ideal training solution for a wide range of healthcare professional including but not limited to patient care, emergency medical intervention and resuscitation training for dynamic team or individual training.

NENA Sim is available from basic to advanced version at 4 levels:

Level 1	Level 2	Level 3	Level 4
<ul style="list-style-type: none"><li>• Realistic look</li></ul>	<ul style="list-style-type: none"><li>• Realistic Look</li><li>• Pediatric Airway Management</li></ul>	<ul style="list-style-type: none"><li>• Realistic Look</li><li>• Pediatric Airway Management</li><li>• Eyes Movement</li><li>• Bowel Movement</li></ul>	<ul style="list-style-type: none"><li>• Realistic Look</li><li>• Pediatric Airway Management</li><li>• Eyes Movement</li><li>• Bowel Movement</li><li>• Sounds</li><li>• Parameters control: Blood pressure, Heart-rate, SPO2 ECGs, CO2, ABP, CVP, PAP, PCWP, NIBP and TOF</li><li>• NENA Sim Software</li></ul>

## Benefits at a glance:

- Suitable for a wide range of healthcare professional
- Realistic eyes, head, and limbs movements
- Simulate various breathing pattern with different rate, depth and complications
- Playable vocal sound recordings
- Blood pressure and heart-rate set up functions
- Offer various parameters output on the patient monitor: ECGs, SpO2, CO2, ABP, CVP, PAP, PCWP, NIBP and TOF.
- Intubation through anatomical realistic airway
- User-friendly touchscreen interface allowing the instructor to input the baby movements and parameters output on the patient monitor.
- Different language options

## Simulators for cardiovascular

# CATHX



*Human size version*



*Mobile version*

## Product description:

**CATH-X** is a simulator with innovative learning technology to support the training of diagnostic and therapeutic procedures in interventional cardiovascular therapy for physician education, qualification and training.

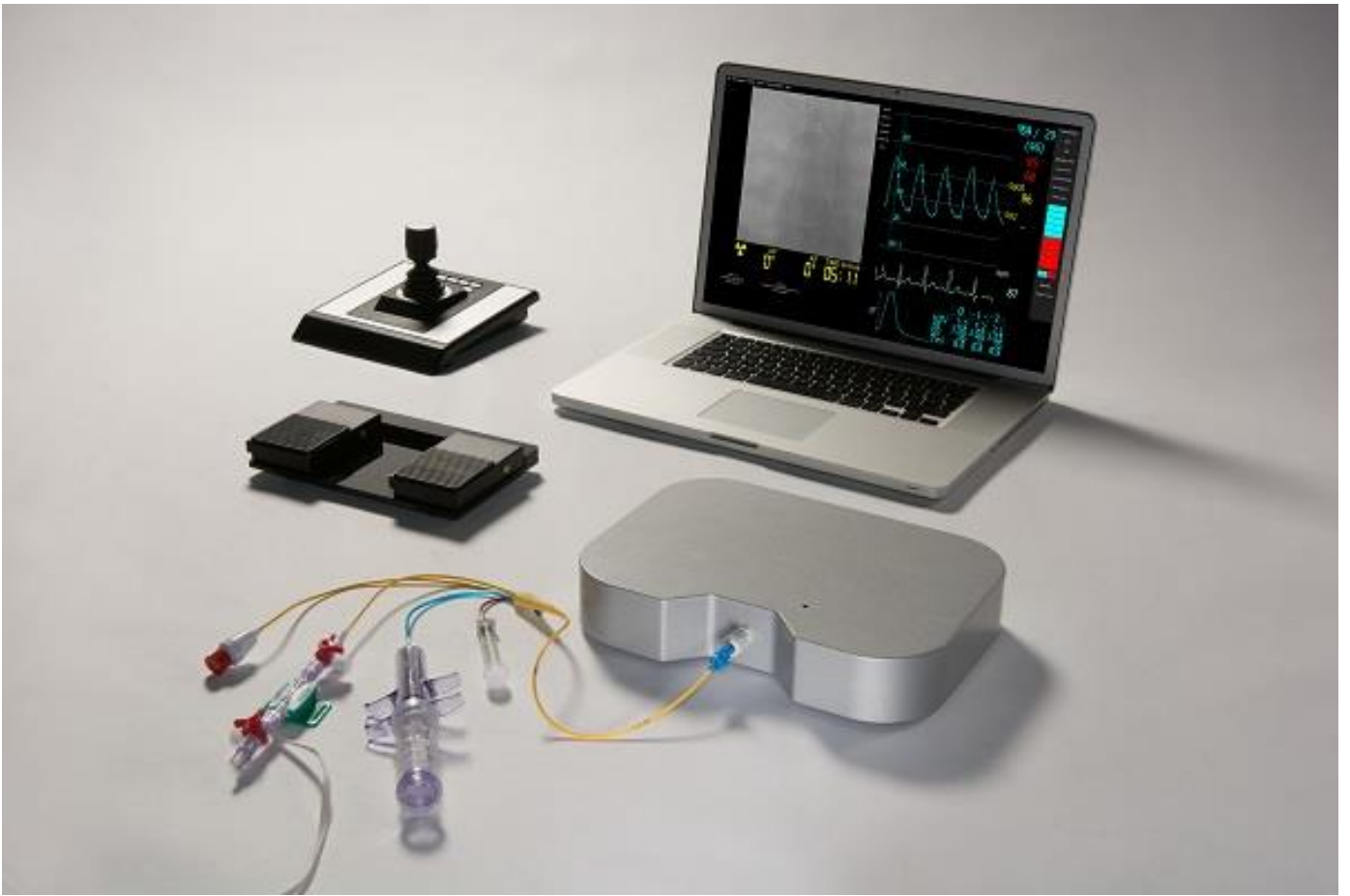
By using the **CATH-X** you can train difficult endovascular interventions under realistic conditions, with original instruments based on real patient data. This better serves physicians and improves patient safety.

**CATH-X** provides simulation training for clinical specialties such as Cardiology, Radiology, Neuroradiology, Anesthesiology, and Pulmonology.

## Benefits at a glance:

- Use only real instruments
- Permits an X-ray unit to be connected locally.
- Vascular models are based on real patient anatomies and can be defined individually within certain parameters
- Has a modular structure. It can be easily connected to other systems and products: for example a Full-Scale-Simulator (patient simulator), various injection pumps, real catheter units, ECG monitors etc.
- A wide variety of difficulty levels for a procedure on the coronary arteries can be practiced as often as required to perfect the training and to improve the efficiency of interventional procedures.
- The training can take place completely independently of the catheter laboratory and the patient.
- No radiation exposure
- Trainer can concentrate fully on the trainee and the procedure without having to keep an eye on the patient at the same time.
- Further patient cases can be additionally created upon demand and acquired.
- In order to monitor the success of training, actions are recorded. In this way data is recorded on a datasheet by way of a report and can be evaluated at any time.

# CATH X RHC



## **Product description:**

CATH-X RHC simulator is the worldwide first right heart catheter simulator. The right heart catheterization is a technique of high relevance for assessing essential hemodynamic parameters. Although considered easy to apply, the technique requires substantial skills to correctly perform the measurements, being the vital basis for further therapeutic decisions. Hence, high reliability of these values are of decisive impact of the further treatment outcome. A real catheter is used to measure the pressure in the right atrium, ventricle and the pulmonary artery. The pulmonary wedge pressure can also be determined. Hemodynamics with cardiac output can be obtained with thermodilution. Trainees learn which measurement values are mandatory and how these are displayed as curves. It provides the users to understand the correlation between anatomy, pressure curves and the clinical picture.

## **Benefits at a glance:**

- Various (rare) cases can be practiced.
- The Only right heart catheterization simulator in the world.
- Uses real catheter
- Determination of pulmonary wedge pressure, hemodynamics with cardiac output via thermo dilution.
- Trainees learn the correlation between anatomy, pressure curves and the clinical picture
- CATH-X RHC is compact, portable and easy to set up