Helianthus

CUSTOMIZED DIGITAL MAMMOGRAPHY

METALTRONICA

Metaltronica takes full advantage of many decades of experience in the diagnostic imaging field and believes in engaging in a continuous dialogue with clinicians and technologists to ensure that its systems address their most uncompromising requirements.

Helianthus

results from a demanding challenge aimed to create a modular digital mammography system that allows the end-user to carry out in-depth screening and clinical examinations with the most up-to-date techniques and let the radiologist evaluate, at any time, possible integration of more advanced features.

VERSATILE PERFORMANCE

In the standard configuration, Helianthus only allows the acquisition of 2D digital mammography images. However, the system is designed to be integrated at any time with the most current diagnostic methods, such as tomosynthesis and dual-energy (contrast-enhanced mammography).

Helianthus can be configured to meet all operational needs through a wide range of accessories, including interventional practices that use stereotactic and tomo-guided biopsy sampling.

Three different digital detectors with both amorphous selenium and amorphous silicon technology are available. All panels have the same resolution (85 microns) and guarantee the acquisition of images of excellent diagnostic quality. They differ only in the cost and execution times of the procedure, thereby allowing the user to configure the set-up of the system based upon his/her specific needs.


C-Arm
with isocentric movements
(upgradable to tomosynthesis)
2 Mp Medical display
(3-5 MP optional)
Protective
screen
Integrated Acquisition
Workstation
Potter-Bucky
with anti-scatter
grid
Multifunctional
foot-control
Intregrated X-ray generator
(Dual Energy predisposed)
Helianthus
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IMPROVED SAFETY FOR BOTH PATIENT AND OPERATOR

The redesign of the new Helianthus has resulted in a further improvement in terms of the system's ergonomics thanks to the isocentric servo-assisted movements of the C-arm that enables smoother and more controlled movements.

Extensive rotational and translation movements (up to 91 cm vertical travel) allow a quick and easy positioning of the patient, even those with impaired or limited mobility.

Three multi-switches placed on the sides of the C-arm and the front of the X-ray tube, assist the operator in managing the motorized movements of the arm.

Two 7" color touchscreen displays placed on the C-arm's sides assist the technician in viewing and managing all the exam parameters.

When rotating the C-arm, a sensitive and precise obstacle detection system ensures maximum patient safety.

STATE-OF-THE-ART FEATURES FOR ACCURATE DIAGNOSIS

Automatic collimation

Helianthus is outfitted with size and position recognition device for the compression paddle that automatically adapts to the X-ray beam collimation in all procedure modes: 2D standard, tomosynthesis (in case of an upgraded configuration), geometric magnification, biopsy.
As a safety measure that prevents exposures that do not comply with the used accessories, the operator can manually select the collimation setup.

"Smart µPress" compression system

The image quality directly correlates to the correct compression of the breast. Helianthus lets the mammography technician perform this operation automatically or in a motorized mode with manual fine adjustments via rotary controllers or fully manually.

"POEt" Processing for Optimal Enhancement

Helianthus employs a powerful "POEt" software that generates diagnostic images directly from the acquired data. The software processes the images in a "For processing" format and displays them in a "For Presentation" format that enhances the tissue structure and reduces noise.

Extremely versatile, the software includes a set of filters dedicated to the study of breasts with prosthesis or with metal findings, anatomical samples or biopsy speciments.

THE PROPER RADIATION DOSE FOR EACH KIND OF BREAST TISSUE

SensROI – Pre-exposure mode

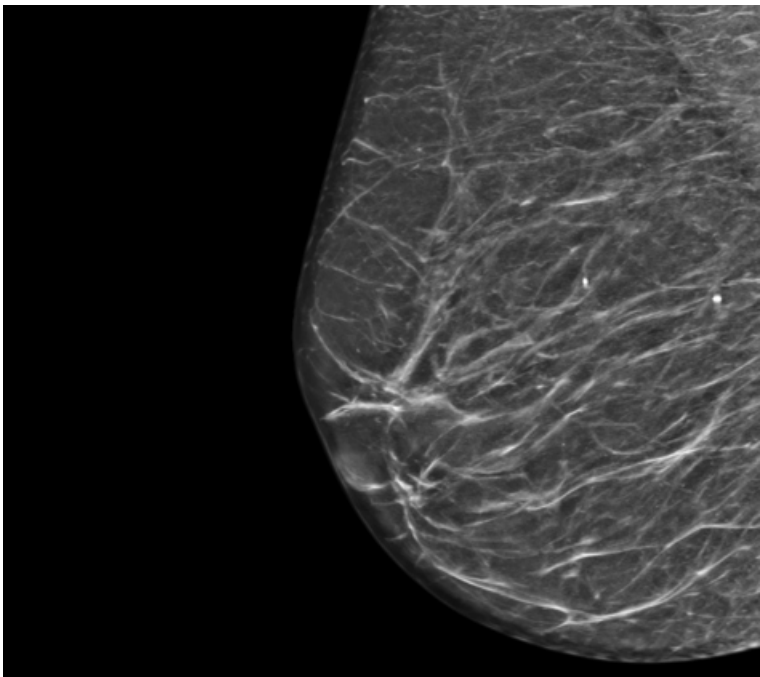
In the Helianthus unit, the digital detector is also used to set optimal exposure parameters in an automatic or a semi-automatic mode. According to the compression paddle employed, a continuous portion of the sensitive area of the detector is selected for a particular procedure and the actual density of the tissue to be examined is determined using a short pre-exposure pulse.

Fast exposure mode

In the presence of implants or when it is difficult to carry out a correct compression of the breast, it is still possible to optimize the dose delivered with another mode of exposure, called FAST, based on the thickness of the tissue to be examined. The exposure parameters are always set to satisfy the requirements of the European Guidelines and the Average Glandular Dose (AGD) is updated in real-time on all displays and appropriately recorded.

A user-friendly interface (GUI) guides the operator in every phase of preparation and acquisition.

This interface allows the technician to select the exposure method (automatic, semi-automatic, or fully manual), the dose profile, and the processing filter to obtain the best possible image based on the type of breast to be examined.



SPECIFIC LAYOUTS FOR EACH EXAMINATION

Anti-Scatter grid

The standard linear grid mounted inside the Potter-Bucky drastically reduces scattered radiation, contributing to the acquisition of sharp and high-quality breast images.

When the user decides to upgrade to tomosynthesis, a particular grid with a high density of strips (102 l/cm) is provided as an alternative. This critical component is manufactured using the same production processes employed for semiconductors, allowing the acquisition of a homogeneous exposition.

The use of the grid in all 2D and 3D examinations, except for geometric magnification, makes this mammography system practical, reliable, and always ready to deliver excellent diagnostic images.

Protective screens

To protect the X-ray beam from other parts extraneous to the exam procedure, the Helianthus is equipped with a polycarbonate screen. When choosing the upgrade to tomosynthesis, an additional larger screen is provided to confine the examination field during the scanning movement, even with the widest angle (50°).

OPTIONS

Bym 3D DMD

The Helianthus can be integrated with the Bym 3D DMD biopsy device for stereotactic or tomosynthesis biopsy procedures, easily interchangeable with the Potter-Bucky and the magnification kit.

The C-arm positioning for the stereotactic biopsy examination (+/-15 °) is motorized and activated with the Bym 3D DMD device. The system has no marking limits and allows the collection of multiple samples. A wide range of supports and adapters allows using standard needles, biopsy guns, and VABs.

Geometric magnification kit

As an option, a geometric magnification kit is available. It includes a platform (with 1.5x or 1.8x or 2x factors) and a 9 x 21 cm compression paddle without an anti-diffusion grid.

Compression paddles

In addition to the standard equipment, additional compression paddles are available as options (i.e., for the geometric magnification, the examination of details, and perforated for two-dimensional biopsy procedures).

STAND-ALONE ACQUISITION WORKSTATION

The Helianthus acquisition and control workstation (AWS) can be offered as a stand-alone unit equipped with a transparent anti-X Ray protection barrier allowing the operator to optimize and manage the workflow remotely.

This configuration includes a 15" touchscreen monitor that facilitates the complete control of the mammography system.

Alternatively, a traditional setup including a 15 " display monitor, keyboard, and mouse is also available.

In both cases, it is always possible to supply the display monitor with a resolution of 2, 3, or 5 MP.

VISUALIZATION AND REPORTING

A dedicated and independent review station for the high-resolution visualization of diagnostic imaging is available as an option. It includes:

- Tools to manage operations, process, and analyze images.
- Workstation with a CD/DVD burner
- Dual 5 MP LCD monochrome monitors
- Color LCD service monitor, keyboard, mouse, and a dedicated keypad

Drawings and images in this document are to be considered indicative and do not bind the manufacturer, who may avail himself of the right to make changes at any time and without prior notice.

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For a brighter future.

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