The power of Hologic is the power of clear innovation and a singular focus . . .

to challenge the boundaries of science and technology every day to raise the
standards of image quality. Our passion has led to discoveries that contribute
to earlier detection, more accurate diagnoses, and better overall patient care.

As we focus on the future, we are bound by our clarity of vision.

A vision created solely to enhance yours.
The Lorad M-IV Series exemplifies Hologic’s commitment to developing advanced imaging technologies that promote the early detection of breast cancer. Designed to provide superior imaging, enhanced operating efficiency and maximum patient comfort, the M-IV platform is the gold standard of screen-film mammography.

The versatile M-IV Series was developed to meet the needs of any breast imaging center. This high performance platform provides a comprehensive package of features to help busy practices perform at peak efficiency, making the M-IV the ideal system for any setting.

### Innovations in breast imaging

#### Image Quality

Hologic is singularly focused on providing the latest innovative solutions to improve mammographic image quality and deliver high-quality images at all times.

- **HTC® Grid**
  High Transmission Cellular Grid provides higher contrast images

- **Bi-angular X-ray Tube**
  Custom designed high performance tube for enhanced magnification views

- **FAST Paddle**
  Exclusive Fully Automatic Self-adjusting Tilt Paddle, for more uniform compression

- **3-Cell, 7 Position AEC Sensor**
  Unique Automatic Exposure Control for more precise technique selection

#### Ease of Operation

Advanced automated features provide outstanding consistency and operator efficiency, setting performance standards for mammography systems:

- **AutoFilter**
  Convenient selection of appropriate exposure and filtration settings

- **Automatic Collimation**
  Complete elimination of manual apertures

- **Four Exposure Modes**
  From fully automatic to totally operator-selected, based on operator preference

- **Operator Preferences**
  Stored and automatically activated upon login

#### Versatility and Flexibility

The Lorad M-IV offers the industry’s most comprehensive upgrade path, providing the ability to expand from screening and diagnostic mammography to stereotactic procedures and full field digital imaging.

The M-IV Series accepts the Lorad Stereoloc® II upright add-on and the Digital Spot Mammography (DSM®). This allows a practice to perform upright stereotactic procedures on its M-IV. The DSM provides near real-time imaging, for dramatically decreased procedure times.

Designed to meet the changing needs of breast imaging, only the M-IV offers an efficient pathway to our Selenia full field digital mammography system. Selenia incorporates all the trusted features of the M-IV, plus the latest advances in digital technology.

Taking advantage of this upgrade pathway allows a practice to protect its original equipment investment and plan the migration to digital mammography at a pace that suits individual facilities and practices.
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Innovations for dramatically improved imaging

The HTC® Grid

Obtaining high-contrast breast images has always been a challenge because of the impact of scatter radiation - image contrast decreases as the thickness of the breast and amount of scatter increases. Moving linear, focused grids were introduced to address this problem. These grids improved scatter absorption in one direction, but the interspace material required by their linear design reduced the transmission of primary x-ray.

The revolutionary technology employed in the HTC Grid resolves these problems with a design that increases both the absorption of scatter and the transmission of primary x-ray. Significantly, these improvements in contrast have been accomplished without the increase in dose usually required in dense breast tissue.

The HTC Grid is unique in both structure and motion, and it is this combination that results in higher contrast images. Unlike a conventional linear grid, the HTC Grid’s focused cellular pattern reduces scatter in both the X and Y directions. This structure is self-supporting, so interspace material is eliminated and primary transmission is also increased. Sophisticated grid motion plays a key role in the process, as well. With the HTC Grid, precise, full-pass motion is micro-processor controlled, for elimination of grid artifacts.

3-Cell, 7 Position Automatic Exposure Control (AEC)

The three-cell AEC sensor can be placed in any of seven positions, extending up to 12.5 cm from the chest wall to allow a greater distance range to achieve more precise tissue sampling. This increased range of extension easily accommodates most breast sizes. Technique selection is based solely on tissue density, rather than breast thickness, for exceptional accuracy and precision. The sensor’s three cells take individual samples of tissue density and an average is used to determine exposure technique.

AEC position, compression force and thickness are digitally displayed on each side of the compression device for easy reference.

FAST Paddle

Hologic’s exclusive FAST Paddle provides improved imaging and greater patient comfort by:

- Ensuring more uniform compression across the entire breast, for superior image quality
- Improving immobilization of breast tissue, for reduced motion artifacts
- Preventing loss of compression or over-compression at the chest wall, for enhanced patient comfort and optimal imaging

By automatically conforming to the natural contour of the breast, imaging of the structures in the sub-areola regions may be improved, while maintaining high image quality and complete visualization of tissue at the chest wall.

Bi-angular X-ray Tube

Custom designed with high speed anode rotation, this tube provides significantly higher mA loading and output, while maintaining tight focal spot size tolerances. This results in reduced exposure times, less motion, and improved imaging with both large and small focal spots.

This high performance tube helps to produce exceptionally high quality, high resolution images for both full field and magnification view.
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AutoFilter Mode — This mode evaluates breast composition before determining whether molybdenum or rhodium filtration is required for appropriate penetration. Dual filter capability allows dose reduction on dense breast tissue, while maintaining superb image quality.

Simplified Selection of Exposure Factor — The system’s four exposure modes can vary exposure techniques from fully automated to totally operator selected, to ensure optimum image quality, shorter exam times, and consistent performance.

Convenient Compression Control — The M-IV Series has three Compression Control Mode Options that are easily customized, for each mammographer, and can be applied by pressing the dual function footswitches. Ultimately, the compression is controlled by the mammographer and is adjusted for each patient.

Fully Automatic Collimation — The Automatic Collimation feature completely eliminates manual apertures, for streamlined workflow and increased accuracy. The field of view is automatically adjusted according to the attached compression device, ensuring that the correct collimation has been selected.

Diagnostic Imaging
The system’s carbon fiber Magnification Table, with an integrated side-loading cassette holder, can be installed on the M-IV quickly and easily, to allow a full range of magnification views to be obtained. The breast support platform is the optimal size to accommodate all diagnostic views, while the stable design of the Magnification Table helps to reduce motion, for improved imaging. Generous working space between the tubehead and the Magnification Table facilitates positioning of the patient by the mammographer.

Variable collimation options allow easier positioning on magnification and spot compression views, resulting in the imaging of a larger area of breast and associated landmarks.

Comfort and ease of positioning
Soft, curved lines and a trim silhouette create a comforting setting, while the recessed face shield and narrow tube head permit flexible and relaxed positioning of the patient’s head and neck. The system’s streamlined design also increases the working area for oblique and lateral views, and for other applications, such as stereotaxis and needle localizations.

C-arm Rotation Features
The positioning gantry has C-arm Rotation Memory to assure symmetric imaging of oblique views. After completing the first MLO, the degree of obliquity is stored in the memory. When rotating the c-arm for the second MLO, the rotation speed will slow as an indication that the desired angle is approaching. The C-arm rotation is motorized and can be easily rotated at the touch of a button.

Isocentric rotation virtually eliminates C-arm height adjustment between the CC and MLO projections. If a minor adjustment is needed, the technologist simply taps the appropriate footswitch, leaving her hands free for positioning. The M-IV easily accommodates all patient exam situations: standing, sitting, or recumbent.

At Hologic, we take women’s health issues personally. Because of our unwavering commitment to women’s health, we constantly seek better solutions for the early detection of breast cancer. It is the driving force behind the many technological innovations in our Lorad mammography systems. At Hologic, we set the standard for performance and image quality, to help you see more, earlier.
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Osteoporosis Assessment  ■  DirectRay® Digital Imaging
LORAD® Breast Cancer Detection  ■  FLUOROSCAN™ C-arm Imaging