

CLARITY OF  
*Vision*



 **LORAD**<sup>®</sup> *M-IV*  
S E R I E S

**HOLOGIC**<sup>®</sup>  
CLARITY OF VISION

# M-IV Series

## Innovations in breast imaging

*Setting the benchmark  
for mammography*

The Lorad M-IV Series exemplifies Hologic's commitment to developing advanced imaging technologies that promote the early detection of breast cancer. The M-IV is designed to expand from screening and diagnostic mammography to stereotactic procedures bringing unparalleled versatility and flexibility to the mammography suite.

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.



### 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 log-in

*The ideal platform  
for your screen-film  
imaging needs*



## **Versatility and Flexibility**

The Lorad M-IV screen-film mammography series has long been recognized as the technology leader in the analog mammography marketplace. The M-IV series has an installed base of over 5,000 units and can be found in leading hospitals and imaging centers across the world.

The M-IV is the ideal screen-film system for high volume practices performing a significant amount of screening, diagnostic, and interventional procedures.

Designed to provide superior imaging, enhanced operating efficiency and maximum patient comfort, the M-IV series is the gold standard of screen-film mammography.

# Innovations

## for dramatically improved imaging

*"We have 15 Lorad M-IV systems around the region and we love them. The HTC grid is a must. The way the FAST paddle compresses all the way through to the nipple is huge. The FAST paddle in combination with the HTC grid gets you a much better, crisper, image. And with the FAST paddle the patient is more comfortable. I will put my M-IV films against any machine on the market."*

*Radiology Administrator*

### 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.

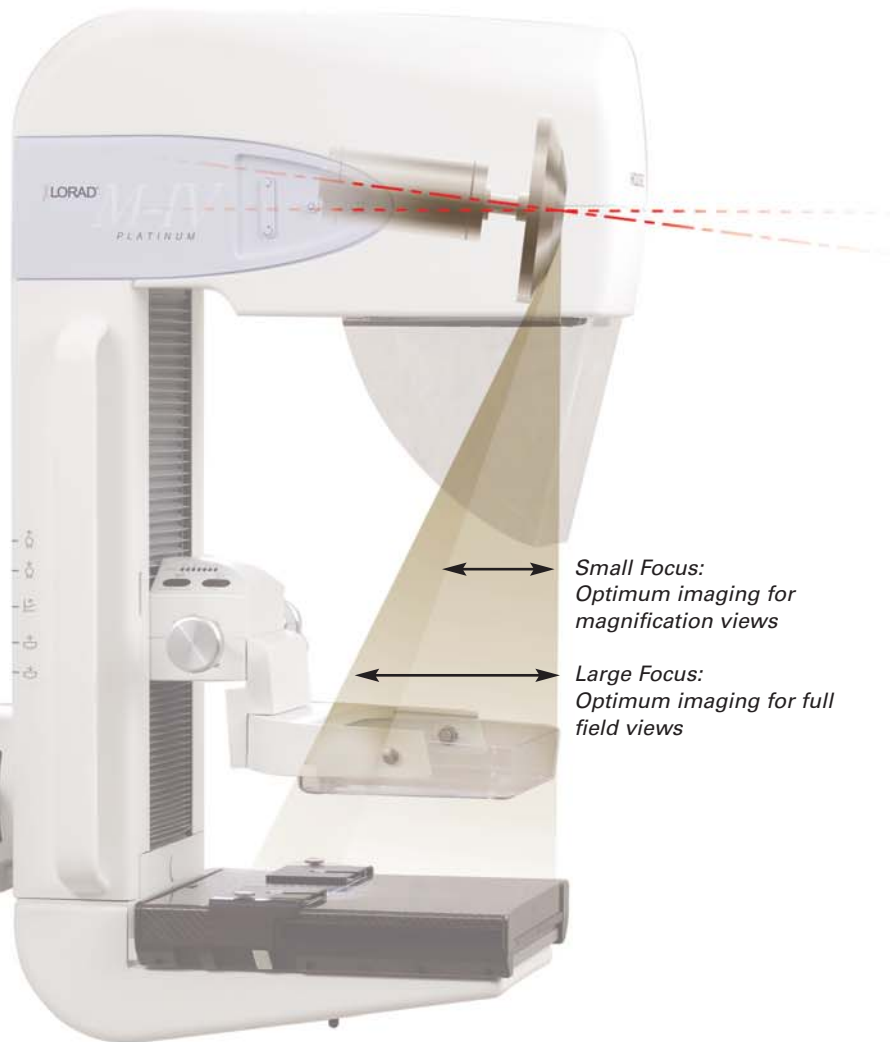
The revolutionary technology employed in the HTC Grid resolves these problems with a design that increases both the absorption of scatter and the transmission of primary x-ray. Significantly, these improvements in contrast have been accomplished without the increase in dose usually required in dense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

### Exceptional Care

M-IV provides outstanding exposure efficiency and consistency that allows mammographers to remain focused on their patient and breast positioning. Much of the technical exposure and filtration settings are automated, however manual override is always available. The automated exposure control is based solely on tissue density and provides exceptional accuracy and precision when determining exposure.





## Bi-angular X-ray Tube

Cutsom designed with high speed anode rotation, this tube provides significantly higher mA loading and output while maintaining tight focal spot size tolerances. The higher tube loading extends the use of the system eliminating the need to wait for the tube to cool down.

This high performance tube helps to produce exceptionally high quality, high resolution images for both full field and magnification views.

## FAST Paddle

Hologic's Fully Automatic Self-Adjusting Tilt (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



# Precision and efficiency

*Control with flexibility  
for greater patient  
throughput.*

**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 based on the paddle selected, ensuring that the correct collimation has been selected.



## Advanced Solutions for Breast Imaging

The M-IV offers a full complement of diagnostic accessories. These tools provide the flexibility and functionality that is essential for the diagnostic evaluation of an area of interest.

Often a suspicious area within the breast that is seen mammographically requires additional imaging. Specialized accessories quickly convert the M-IV to an advanced imaging system for stereotactic, needle localization and ultrasound procedures.

As shown here, a specialized paddle with cut-away "T" section, accommodates an ultrasound probe allowing exams to be performed while under compression. Visualizing the breast tissue in the same plane as the mammogram provides diagnostic assurance without any inconvenience to your patients.

# 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 motorized rotation is ergonomically designed so that with minimal effort the operator can easily rotate the C-arm 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.



## Innovations Early Detection WOMEN'S HEALTH

*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.



*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.*

**Lorad® Breast Cancer Detection ■ Osteoporosis Assessment  
MRI Extremity Imaging ■ Fluoriscan™ C-arm Imaging**

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