MAMORAY™ HDR-C

Film

Provides the contrast desired for viewing breast tissue and clinical information

- Optimal dynamic range for optimized view of varying density areas
- Cubic Crystal technology minimizes noise on the image caused by inherent graininess
- Cubic Crystals develop rapidly, improving the consistency of your processing
- The silver crystal structure produces a comfortable cool blue image tint

> ***MAMORAY HDR-C MAMMOGRAPHY FILM PROVIDES THE CONTRAST DESIRED FOR VIEWING BREAST TISSUE AND CLINICAL INFORMATION.***

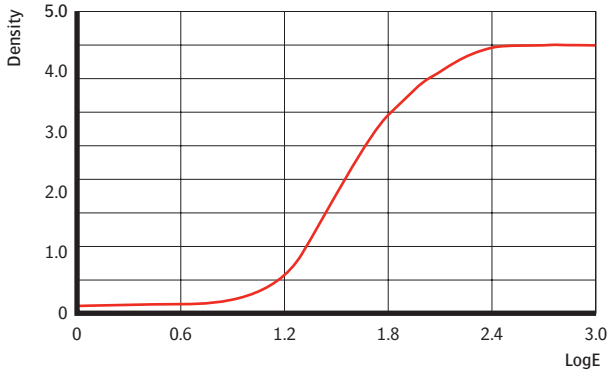
> ***MAMORAY HDR-C PROVIDES THE BEST RESULTS IN COMBINATION WITH MAMORAY SCREENS & CASSETTES.***

Two emulsion technologies working together

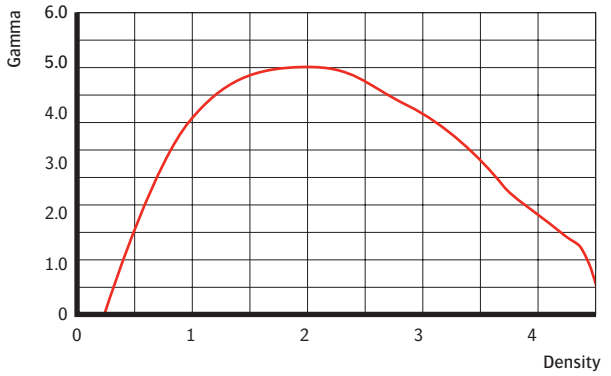
MAMORAY HDR-C is a single-sided orthochromatic mammography film that is part of the Agfa HealthCare film/screen system for mammography. The film uses both Split Emulsion Layer (S.E.L.) and the Cubic Crystal technologies.
Our Split Emulsion Layer technology provides the MAMORAY HDR-C film with two separate emulsion layers on one side of the film. Each of these layers consists of monodispersed Cubic Crystals: cubic silver crystals of identical size. These crystals minimize the noise on the image, which is caused by the inherent film graininess.

Film sensitometry

Sensitometric curve

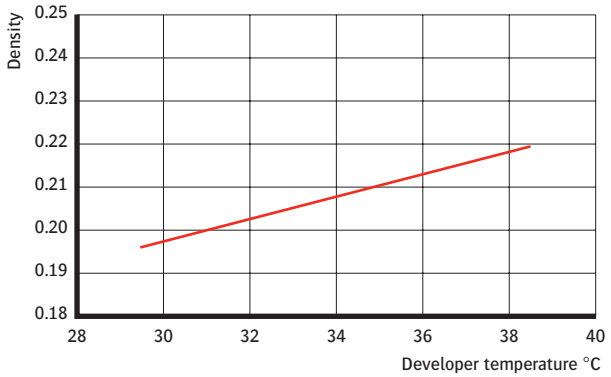


Gamma curve

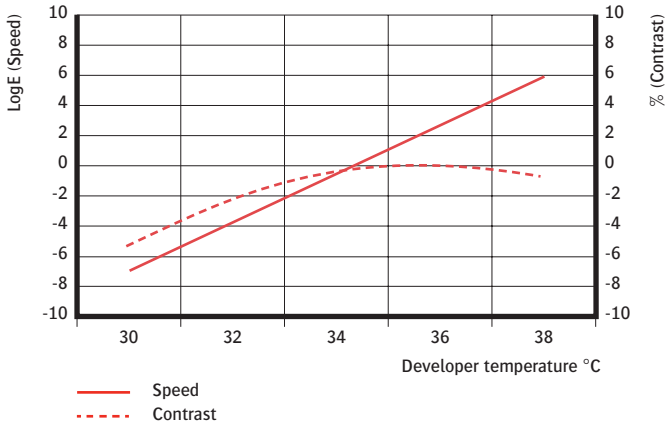


Dynamic curves

Base & Fog



Speed & Contrast



Increased gradient

The mammography system offered by Agfa today combines several technologies which results in many advantages and in an unmatched mammography image quality. The design of the dynamic range permits visualization of clinically significant information in both glandular and retroglandular tissue. The sensitometric curve supports the visualization of the varying densities found within the breast, providing optimized contrast at each density.

High dynamic range

MAMORAY HDR-C performs well for mammography imaging due to its high dynamic range. The sensitometric curve supports the visualization of the varying densities found within the breast, providing optimized contrast at each density.

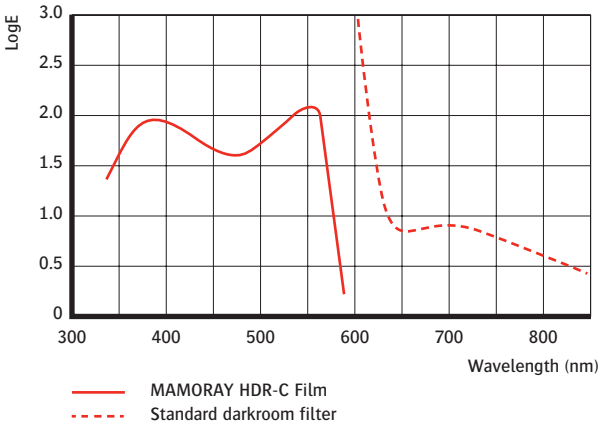
Two separate emulsion layers

The first emulsion layer provides high contrast in the breast parenchyma and improved visualization of clinically significant information in dense tissue. The second emulsion layer provides the radiologist with a high maximum density, which enhances the visualization of subcutaneous and retro-glandular areas, especially in radio-dense breasts.

Consistent results and ease of use

Cubic Crystals develop rapidly, improving the consistency of your processing. The normal fluctuations in the processing conditions hardly have any effect on the sensitometric results of the MAMORAY HDR-C film. The optimized silver crystal structure of MAMORAY HDR-C results in a neutral image tint which makes images easier and comfortable to read. Furthermore, it reduces eye fatigue and maximizes the ability to visualize small details and fine structures within the breast.

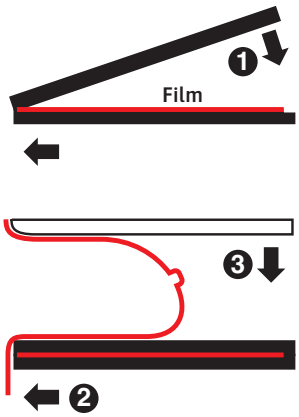
Darkroom sensitivity



These results were obtained using RP-processing on a MAMORAY Compact E.O.S., G138i/G334i, at 34 °C/95 °F.

MAMORAY HDR-C

Cassettes & Screens



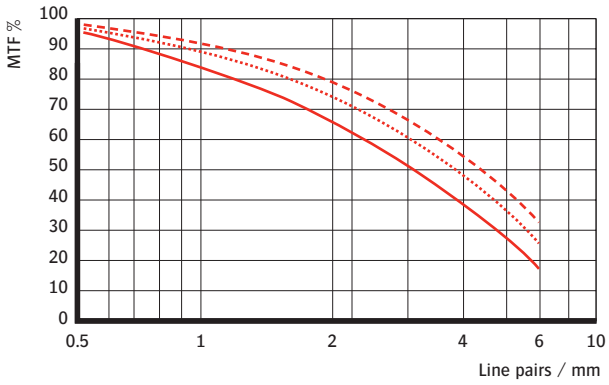
MAMORAY Cassettes: Lightweight durability

MAMORAY cassettes are made of Novodur, an extremely tough and light plastic. The cassettes are easy to handle, are long lasting and shockproof.
The design of the MAMORAY cassette ensures that the edge of screen and film are in close contact with the thoracic edge of the cassette. This way, the film draws closer to the thorax on closing the cassette and the distance between the edges of the film and the thorax side of the cassette can be limited to less than 2 mm.
MAMORAY cassettes are equipped with a pneumatic foam, which makes the extraction of air so fast that you can use the cassette almost immediately after closing it.

MAMORAY Screens: Images with outstanding sharpness at low dose

MAMORAY HD, HD-S and Detail R intensifying screens - which all contain green-emitting rare earth phosphors (Gd_2O_2S:Tb) - are an integral part of the Agfa film/screen system for mammography.
Combine MAMORAY HD and HD-S screens with MAMORAY HDR-C film. This will result in a superb image quality and in a reduction of the dose by up to 40% in comparison to the HD-screen. Even at low doses, outstanding diagnostic information is provided.
The MAMORAY Detail R intensifying screens are designed for further exposure and noise reduction.

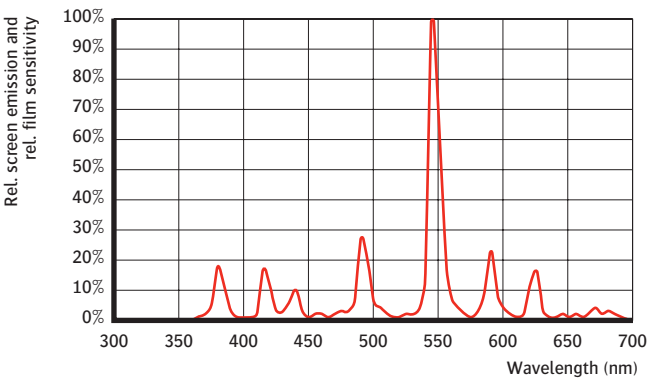
Modulation transfer function



MAMORAY HDR-C film with MAMORAY screen
- MAMORAY HD
- MAMORAY HD-S
- MAMORAY Detail R

This curve is the result of measurements that give a degree of the "intrinsic sharpness" of the film/screen system. This is a partial measurement of the total image quality of the film/screen system as perceived on the viewing box. The total image quality depends on other factors besides the "intrinsic sharpness". The principal factors are: graininess, noise, film contrast and aesthetic factors such as film density, image tint, etc.

Spectral Emission curve



TECHNICAL SPECIFICATIONS

Processing conditions MAMORAY HDR-C film

	Up to 75 films/day		75-150 films/day		>150 films/day	
Temperature	34-35 °C (94-95 °F)		34-35 °C (94-95 °F)		34-35 °C (94-95 °F)	
Processing cycle	RP/90s/120s		RP/90s/120s		RP/90s/120s	
Developer replenishment	800 ml/m²		600 ml/m²		400 ml/m²	
Fixer replenishment	600 ml/m²		600 ml/m²		600 ml/m²	
Starter amount	25 ml/l		25 ml/l		25 ml/l	
	Irregular	**Regular**	**Irregular**	**Regular**	**Irregular**	**Regular**
Jog-cycle [1]	auto	auto	auto	auto	off	off
Start-up cycle [2]	on	off	on	off	on	off

[1] Available on all E.O.S. processing equipment. There are 3 settings: on, off and auto. On means that there is always a minimum amount of developer added to the developer tank. Auto means that the jog cycle is switched on, which indicates that less than 3 m² (about 75 films) was processed the day before.

[2] Available on all E.O.S. processing equipment. Every time the processor is started, one fourth of the developer is replaced.

Available MAMORAY Cassette sizes

Cassette type	ID window exposed areas	Available sizes
European	EU 62.4 x 16 mm	18 x 24 cm
		24 x 30 cm
US	US 62.4 x 26 mm	18 x 24 cm
		24 x 30 cm

MAMORAY intensifying screen combinations

Film	Screen	Rel. speed
MAMORAY	MAMORAY HD	100
HDR-C	MAMORAY HD-S	140
	MAMORAY Detail R	170

MAMORAY HDR-C FILM

Storage conditions

- Temperature: 4-25 °C/39-77 °F
- Relative humidity: between 30-50%

Operating conditions

- Temperature: 15-25 °C/60-77 °F
- Relative humidity: between 30-50%
- Shield the film from heat and all penetrating radiation, which might fog the film.

Recommended chemicals

- G138i developer and G334i fixer are strongly recommended

Recommended developer temperature

- Developer temperature: 34 °C (95 °F)

MAMORAY CASSETTES

Safety compliance

- DIN 6832 part 2 and 3, ANSI PH 1.49, IEC 406

MAMORAY SCREENS

Recommendations

- Protect MAMORAY screens from humidity
- Do not expose to sunlight or ultraviolet rays, that may result in discoloration or warping.
- Immediately remove dust and stains from the screens

Cleaning

- Only use Agfa screen cleaner to clean the MAMORAY screens
- Moisten a piece of gauze with the cleaner
- Gently wipe the screen surface
- After cleaning, dry the screen using a clean piece of gauze
- Leave the cassette open for drying before reloading it with film

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