

> **MAMORAY™ HDR-C**

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

> **MAMORAY HDR-C film****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.

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.

Optimal dynamic range optimized view of each density area

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 is part of Agfa's Embrace portfolio. With our Embrace Women's Care portfolio, Agfa delivers quality healthcare to patients and fully integrated solutions to mammography specialists.



> MAMORAY HDR-C

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.

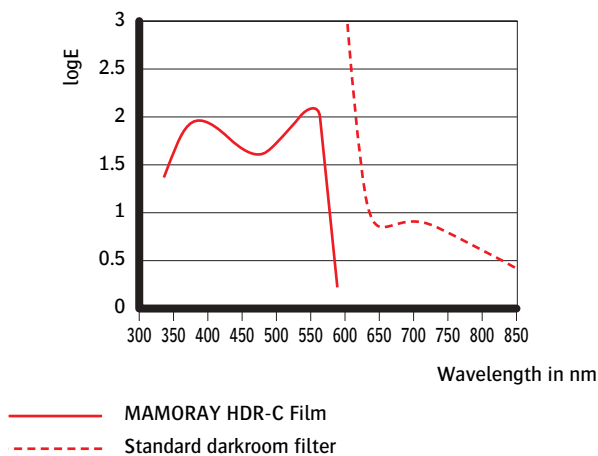
The second emulsion layer provides the radiologist with a high maximum density, which enhances the visualization subcutaneous areas and retro-glandular areas, especially in radio-dense breasts.

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

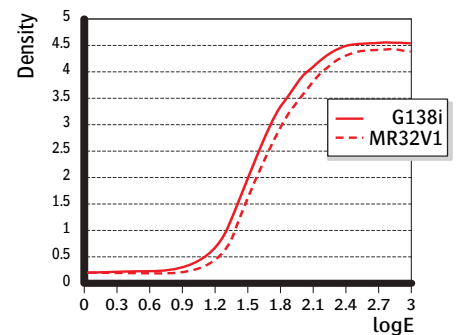


Results with MAMORAY HDR-C

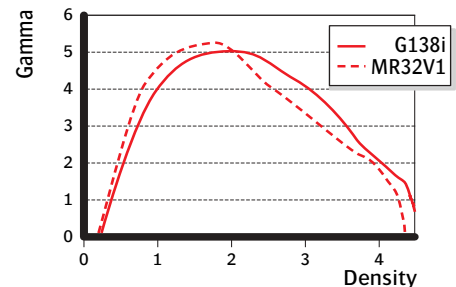
These results were obtained using RP-processing on a MAMORAY Compact E.O.S., MR32V1-G138i/G334i, 34 °C/95 °F.

Film sensitometry

Sensitometric curve

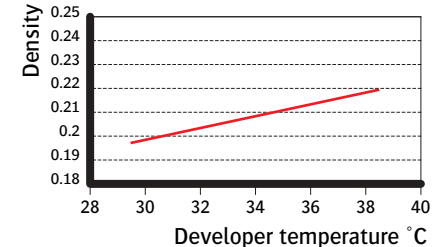


Gamma curve

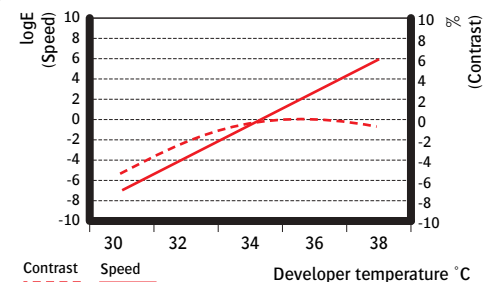


Dynamic Curves

Base + Fog



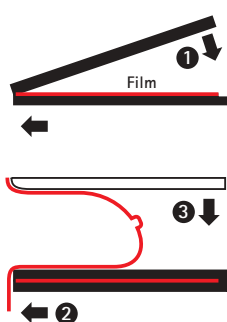
Speed & contrast curve



> MAMORAY 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.

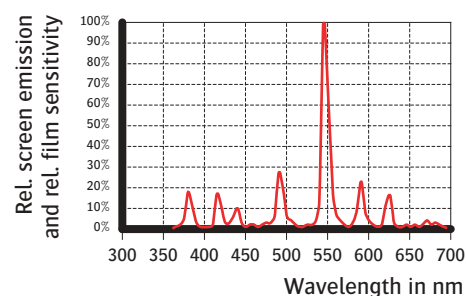


The design of the MAMORAY cassette ensures that the edge of screen and film are in close contact with the thoracic edge of the cassette. This way, the film draws closer to the thorax on closing the cassette and the distance between the edges of the film and the thorax side of the cassette can be limited to less than 2 mm.

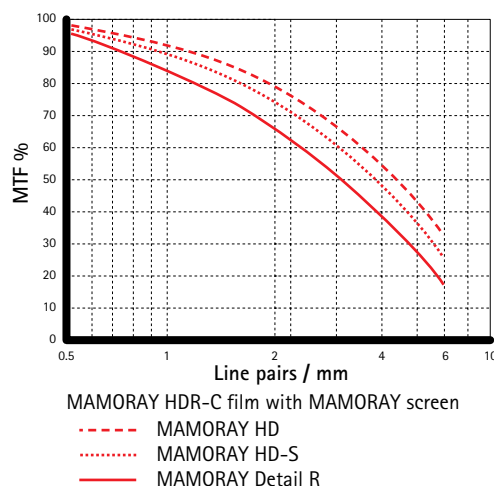
MAMORAY cassettes are equipped with a pneumatic foam, which makes the extraction of air so fast that you can use the cassette almost immediately after closing it.



Spectral Emission Curve



Modulation Transfer Function



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.

> 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 ($\text{Gd}_2\text{O}_2\text{S:Tb}$) - 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.

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/m ²		600 ml/m ²		500 ml/m ²	
Fixer replenishment	600 ml/m ²		600 ml/m ²		600 ml/m ²	
Starter amount	25 ml/m ²		25 ml/m ²		25 ml/m ²	
	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

Type of cassette	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	Relative Speed
MAMORAY HDR-C	MAMORAY HD	100
	MAMORAY HD-S	140
	MAMORAY Detail R	170

Technical specifications

MAMORAY HDR-C film: storage conditions

The MAMORAY HDR-C film should be stored under the following conditions:

Temperature: 10-22 °C/50-70 °F

Relative humidity: between 30-50%

Operating conditions

The operating conditions for MAMORAY HDR-C should be the following:

Temperature: 15-25 °C/60-75 °F

Relative humidity: between 30-50%

Shield the film from heat and all penetrating radiation, which might fog the film.

MAMORAY Cassettes: safety compliance

MAMORAY cassettes comply with the following international standards:

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.

MAMORAY 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.

Recommended chemicals

G138i developer and G334i Fixer are strongly recommended.

Recommended developer temperature

Developer temperature: 34 °C (95 °F)

The data in this publication are for illustration purposes only and do not necessarily represent standards or specifications which must be met by Agfa. Characteristics of the products described in this publication can be changed at any time without notice.

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