



## MAMORAY™ HDR-C Plus Film

Enhanced contrast and  
skin line visualization

- Enhanced contrast and visualization of skin line, while maintaining exposure latitude
- Split Emulsion Layer technology provides three separate emulsion layers
- 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 neutral image tint

> **MAMORAY HDR-C PLUS IS AGFA'S NEWEST HIGH QUALITY MAMMOGRAPHY FILM. IT PROVIDES HIGH CONTRAST IMAGES WITH AN ENHANCED SKIN LINE VISUALIZATION.**

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

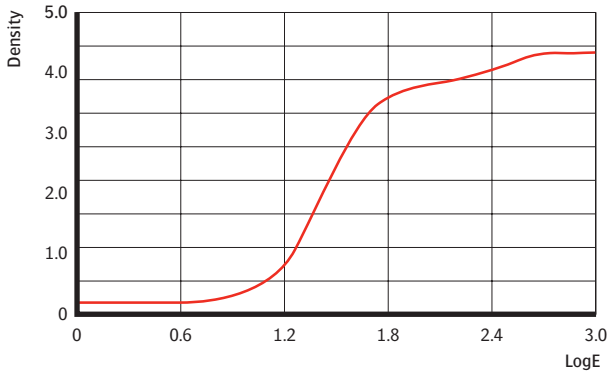
### *Two emulsion technologies working together*

MAMORAY HDR-C Plus 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.

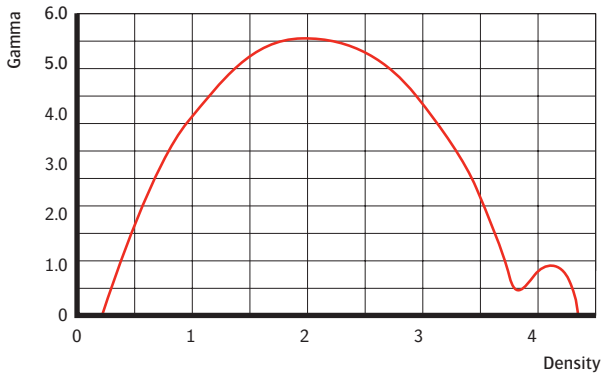
Agfa's Split Emulsion Layer technology provides the MAMORAY HDR-C Plus film with three emulsion layers on one side of the film. Each layer consists of monodispersed Cubic Crystals of identical size.

## Film sensitometry

### Sensitometric curve

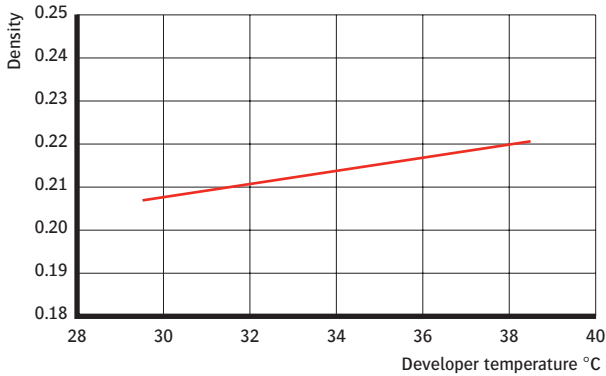


### Gamma curve

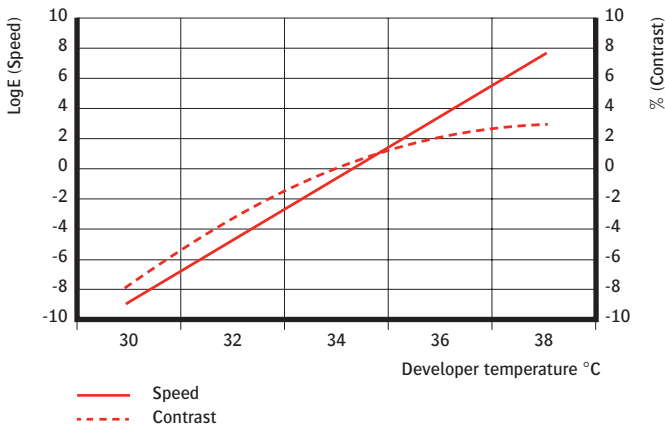


## Dynamic curves

### Base & Fog



### Speed & Contrast



— Speed  
- - - Contrast

Because the latent image is formed on the edge of the crystals, the developing chemicals (G138i) do not have to penetrate into the crystals. As a result the developing process is fast and allows less scope for variations. In this way Agfa's Cubic Crystal technology ensures extremely consistent mammography images.

## High contrast

The mammography system offered by Agfa today combines several technologies which results in many advantages and in an unmatched mammography image quality. The increased gradient ensures improved visualization of clinical significant information in both the glandular and retroglandular tissue.

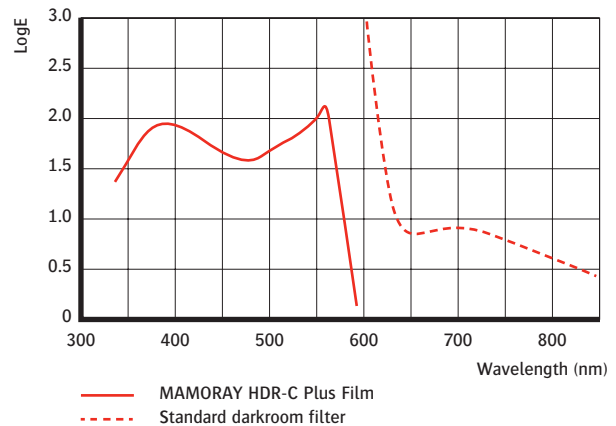
## Dynamic range

A particular strong point is the system's high dynamic range. For every image, the contrast is optimized for each density range. Equally, the system provides excellent visualization of details which are further enhanced by the masking effect of high maximum density in the non-image area adjacent to the skin-line.

## Consistent and easy to use

Agfa's Cubic Crystal technology provides highly consistent processing results and optimal image quality. Normal fluctuations in the processing conditions hardly have any effect on the sensitometry of the film. The silver crystal structure produces a comfortable neutral image tint that helps to perceive tiny low contrast details.

## Darkroom sensitivity

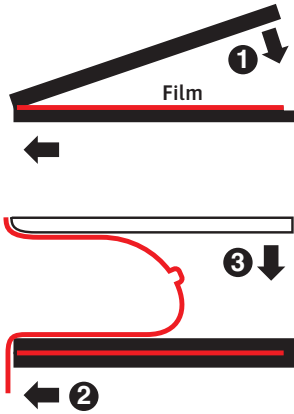


— MAMORAY HDR-C Plus Film  
- - - Standard darkroom filter

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

# MAMORAY HDR-C Plus

## 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:

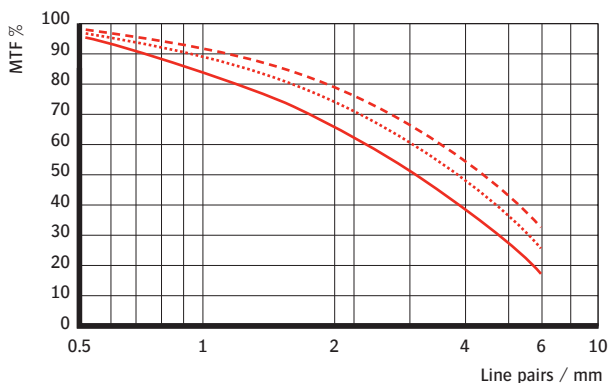
#### Images with outstanding sharpness at low dose

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 Plus 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

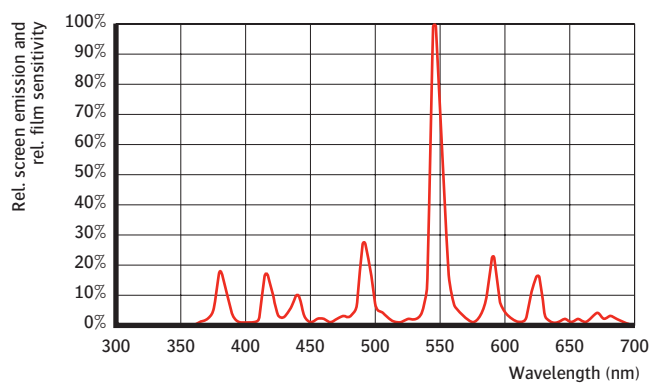


MAMORAY HDR-C Plus film with MAMORAY screen

- 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 Plus 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 <sup>2</sup>	600 ml/m <sup>2</sup>	400 ml/m <sup>2</sup>
Fixer replenishment	600 ml/m <sup>2</sup>	600 ml/m <sup>2</sup>	600 ml/m <sup>2</sup>
Starter amount	25 ml/l	25 ml/l	25 ml/l
	<b>Irregular</b>	<b>Regular</b>	<b>Irregular</b>
Jog-cycle <sup>1</sup>	auto	auto	auto
Start-up cycle <sup>2</sup>	on	off	on
	<b>Irregular</b>	<b>Regular</b>	<b>Irregular</b>
	auto	auto	auto
	on	off	on

<sup>1</sup> 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 m<sup>2</sup> (about 75 films) was processed the day before.

<sup>2</sup> 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 Plus	MAMORAY HD-S	140
	MAMORAY Detail R	170

### MAMORAY HDR-C PLUS 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

### 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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Printed in Belgium  
Published by Agfa-Gevaert N.V.  
B-2640 Mortsel - Belgium  
NF2BJ GB 00200508

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