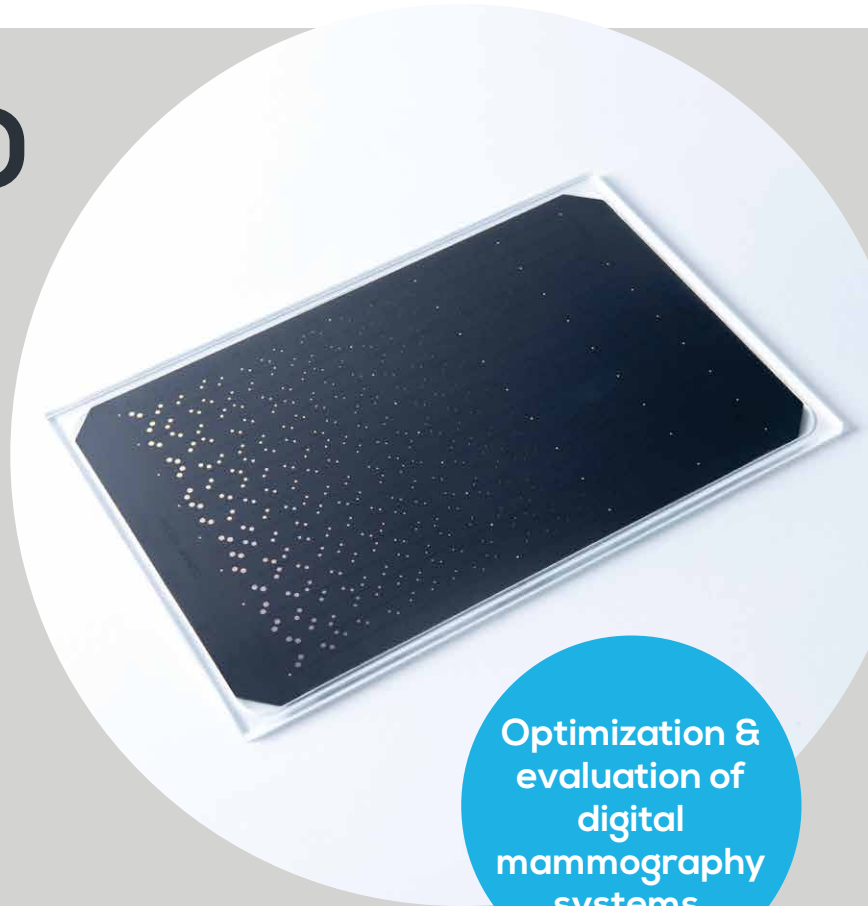


# CDMAM 4.0 & Analyser

The Artinis CDMAM 4.0 is the next generation Mammography Contrast Detail Phantom with precise specifications specially designed for measuring imaging performance for digital mammography. The phantom is optimized for European Guidelines for Quality Assurance in Digital Mammography. The gold discs are placed in the area of interest of the psychometric curve for accurate determination of Contrast Detail curves and a high dose sensitivity. The phantom is created from a highly accurate production process.



Optimization & evaluation of digital mammography systems.

## Applications

- Quality control and assurance for imaging performance of digital mammography systems
- Optimization and evaluation of digital mammography systems
- Determination of the optimum exposure technique comparison of image quality at various thicknesses of PMMA
- Determination of the optimum background density
- Comparison of different mammography systems

## Specifications

- 672 gold discs divided into 21 exponential steps, diameter ranging from 0.08 to 2.0 mm
- Every single diameter has its own optimized gold thickness range with 16 different thickness steps
- 43 additional reference discs for optimal computerized scoring
- 0.5 mm polished aluminium (99.5%) base
- PMMA cover (240 x 162 x 3 mm)
- Includes 4 PMMA plates (10 mm polished appearance, thickness tolerance  $\pm 0.1$  mm)

## Standards & guidelines

- European guidelines for quality assurance in breast cancer screening and diagnosis, fourth edition
- European Protocol for the Quality Control of the Physical and Technical Aspects of Digital Breast Tomosynthesis Systems version 1.03
- NHSBSP Equipment Report 0604, Commissioning and Routine Testing of Full Field Digital Mammography Systems Published April 2009 (Version 3)
- IEC 61223-3-2



# CDMAM 4.0 Phantom

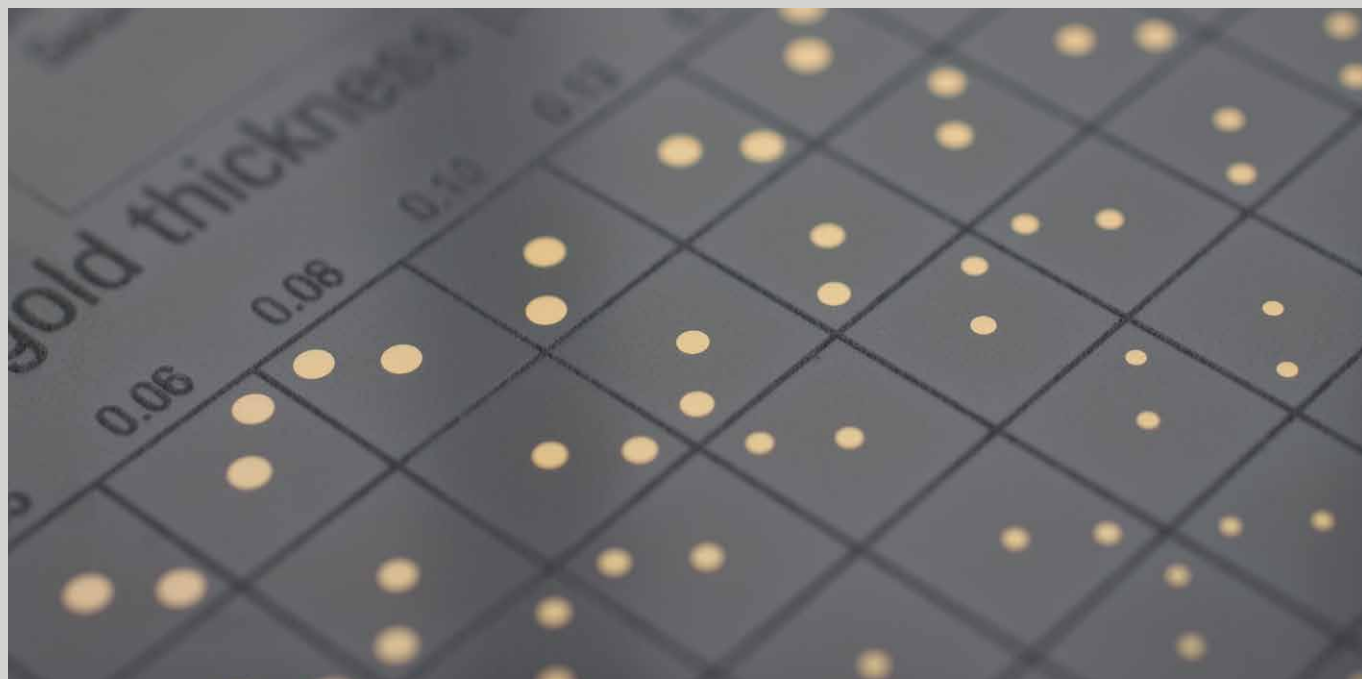
Diameter (mm)

	2.00	1.70	1.40	1.20	1.00	0.88	0.77	0.66	0.57	0.50	0.42	0.35	0.30	0.25	0.21	0.18	0.15	0.13	0.10	0.09	0.08
16	0.103	0.105	0.106	0.106	0.129	0.147	0.168	0.191	0.208	0.240	0.264	0.341	0.446	0.549	0.675	0.849	1.195	1.396	2.434	2.633	2.800
15	0.094	0.096	0.098	0.097	0.109	0.128	0.148	0.170	0.192	0.210	0.239	0.308	0.401	0.493	0.601	0.763	1.105	1.310	2.228	2.411	2.601
14	0.087	0.089	0.090	0.090	0.099	0.109	0.130	0.149	0.171	0.193	0.208	0.269	0.351	0.448	0.554	0.681	0.964	1.205	2.019	2.179	2.380
13	0.078	0.078	0.079	0.079	0.091	0.100	0.110	0.130	0.150	0.171	0.191	0.242	0.312	0.401	0.493	0.606	0.865	1.111	1.854	2.000	2.180
12	0.069	0.069	0.071	0.071	0.080	0.091	0.100	0.110	0.130	0.150	0.169	0.209	0.272	0.350	0.442	0.554	0.777	0.970	1.680	1.830	1.958
11	0.056	0.056	0.057	0.057	0.071	0.080	0.092	0.100	0.110	0.130	0.148	0.192	0.243	0.310	0.396	0.490	0.690	0.860	1.560	1.655	1.787
10	0.048	0.048	0.049	0.049	0.057	0.071	0.080	0.091	0.100	0.109	0.129	0.170	0.210	0.270	0.344	0.440	0.610	0.770	1.440	1.531	1.623
9	0.042	0.042	0.043	0.043	0.049	0.057	0.071	0.080	0.091	0.100	0.108	0.147	0.190	0.240	0.304	0.390	0.550	0.678	1.330	1.415	1.508
8	0.037	0.037	0.038	0.038	0.043	0.049	0.057	0.070	0.080	0.090	0.098	0.127	0.167	0.206	0.264	0.338	0.485	0.598	1.210	1.304	1.386
7	0.032	0.032	0.033	0.033	0.038	0.043	0.049	0.057	0.070	0.079	0.089	0.107	0.144	0.186	0.234	0.297	0.429	0.538	1.100	1.184	1.273
6	0.027	0.027	0.028	0.028	0.033	0.038	0.043	0.049	0.056	0.070	0.077	0.096	0.125	0.163	0.200	0.256	0.379	0.467	0.947	1.081	1.165
5	0.023	0.024	0.024	0.024	0.028	0.033	0.038	0.042	0.048	0.056	0.069	0.088	0.104	0.142	0.181	0.227	0.327	0.416	0.833	0.928	1.047
4	0.020	0.021	0.021	0.021	0.024	0.028	0.032	0.037	0.042	0.048	0.055	0.076	0.093	0.121	0.158	0.194	0.285	0.366	0.731	0.810	0.890
3	0.017	0.018	0.018	0.018	0.021	0.024	0.027	0.032	0.037	0.041	0.047	0.067	0.085	0.101	0.136	0.173	0.245	0.313	0.640	0.716	0.782
2	0.015	0.015	0.015	0.015	0.018	0.021	0.024	0.027	0.032	0.036	0.040	0.053	0.073	0.090	0.116	0.150	0.216	0.273	0.557	0.617	0.684
1	0.012	0.012	0.012	0.012	0.015	0.018	0.021	0.023	0.027	0.031	0.035	0.045	0.064	0.081	0.096	0.129	0.165	0.231	0.493	0.535	0.590

Nominal Thicknesses of the CDMAM 4.0 gold disks ( $\mu\text{m}$ )

Thickness from: 0.012  $\mu\text{m}$  to 2.8  $\mu\text{m}$ , tolerance  $\pm 3\%$  (Mean  $\pm 2\text{SD}$ )

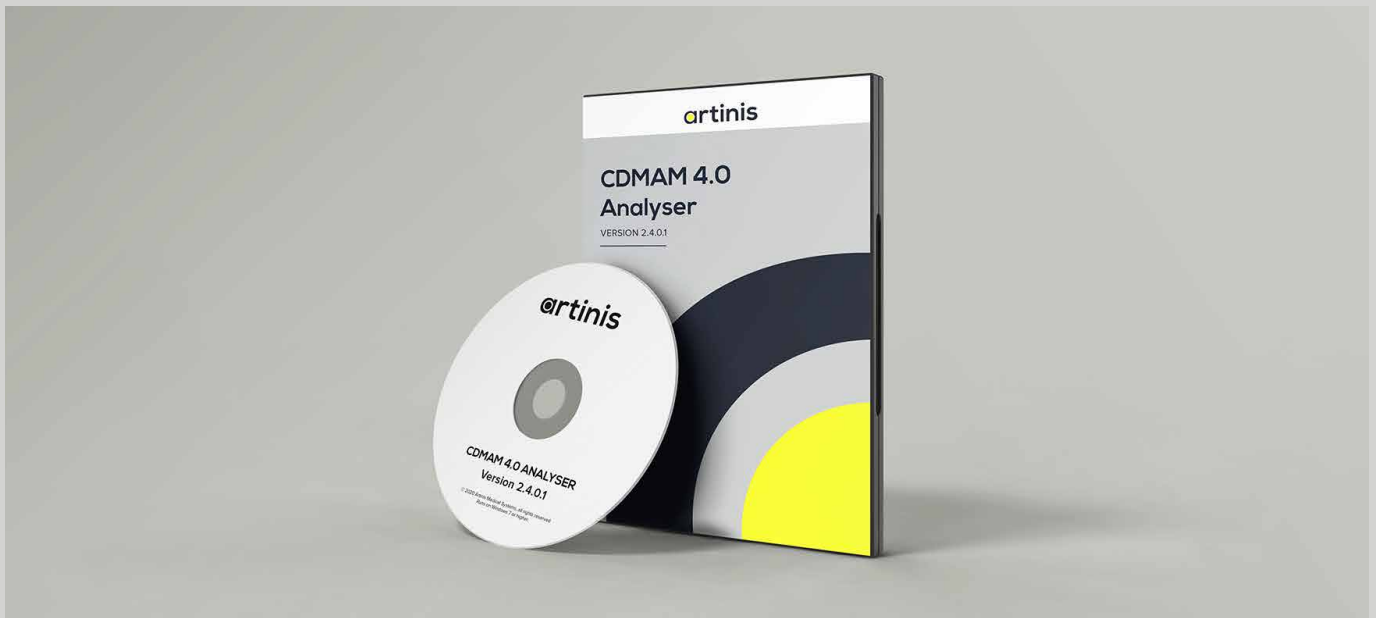
Diameter from: 0.08 mm to 2.0 mm, tolerance  $\pm 0.005$  mm (Mean  $\pm 2\text{SD}$ )



# CDMAM 4.0 Analyser Software

The CDMAM 4.0 Phantom has been specially designed for automatic image scoring. For analysis of the phantom images, we developed CDMAM 4.0 Analyser Software, based on CDCOM for CDMAM 4.0 ([www.euref.org](http://www.euref.org)). With the analyzer software, the threshold contrast thicknesses are determined according to the supplement to the 4th edition of the European Guidelines for Quality Assurance in Breast Cancer Screening and Diagnosis.

The method is described in the supplement to the European Guidelines for Quality Assurance in Breast Cancer Screening and Diagnosis. The result of each analysis step is shown in the software. You can easily compare many groups of images and compare their CD curves, IQFInv scores and percentage of detected gold discs.



## Highlights

- Determine the psychometric curves
- Correct to human readout values,
- Calculate the contrast detail (CD) curves
- Detect the threshold thickness of the different diameters
- Collect the results of the automatic readout software CDCOM

## Specifications & requirements

- Image format: dicom
- Free usb port needed
- Runs on Windows 7, 8 and 10
- In combination with the CDMAM 4.0 phantom

