



Application Note

Black Piranha on Siemens Mammomat

This application note describes how to correct kV measurements with the Black Piranha on Siemens Mammomat.

Note that the information hereafter is valid for Black Piranha with product version 5.5. The information is not valid for Red Piranha or Barracuda MPD.

Introduction

Evaluation of the Black Piranha has been performed at a range of sites for the Siemens Mammomat on various target/filter combinations.

All data below are valid for large focal spot, and the detector positioned in reference position on the breast support, 6 cm from chest wall.

Correction Factors for Black Piranha

The data hereunder are valid for Black Piranhas calibrated after May 1, 2016

With the Black Piranha several improvements have been introduced.

- The hardware has been changed to minimize position and angle dependence in mammography. It does no longer matter if the Piranha is placed with the detector area to the left or to the right.
- The internal algorithms in the calibration procedure have been improved so that deviation between every individual Piranhas are minimized.
- A range of manufacturer specific and machine specific calibrations have been introduced for even higher precision in measurements.

The tables below show correction data for the Black Piranha (product version 5.5), with calibrations after May 1, 2016. The corrections are valid to specifically match the various Siemens Mammomat units, with exception of Mammomat Revelation.

For kV (and Dose, HVL, etc) on Mammomat Revelation, using M18: W/Cu on Titanium Filter and using M6: W/Rh on Rh Filter, No corrections need to be applied.



Application Note

All data below shows the correction to apply for a Black Piranha. The data is valid for large focal spot.

Mammomat family with exception of Revelation

Mo/30 μm Mo (M1)

No correction needs to be applied.

Mo/25 μm Rh (M3)

Measured kV	Black Piranha Correction
23	+0.0 kV
24	-0.2 kV
25	-0.4 kV
27	-0.6 kV
28	-0.8 kV
29	-0.7 kV
30	-0.6 kV
31	-0.5 kV
32	-0.4 kV
33	-0.3 kV
34	-0.3 kV
35	-0.4 kV

W/50 μm Rh (M6)

(with exception of Mammomat Revelation)

Measured kV	Black Piranha Correction
24	-0.6 kV
25	-0.8 kV
26	-0.9 kV
27	-1.0 kV
28	-1.0 kV
29	-0.9 kV
30	-0.9 kV
31	-0.7 kV
32	-0.5 kV
33	-0.5 kV
34	-0.4 kV

Revelation

W/50 μm Rh (M6)

No correction needs to be applied.

W/Ti - Revelation

Use M18 (W/300 μm Cu)

No correction needs to be applied.