

frame index: 1, angle: -7.5
frame index: 2, angle: -5.625
frame index: 3, angle: -3.75
frame index: 4, angle: -1.875
frame index: 5, angle: 0
frame index: 6, angle: 1.875
frame index: 7, angle: 3.75
frame index: 8, angle: 5.625
frame index: 9, angle: 7.5

The sample rotates while the x-ray source and detector are static. This is analogous to the concept that the both x-ray source and detector rotate around the axis of rotation. So the angle of rotation for both the x-ray source and detector will be 15 degrees.

The source to detector distance (DSD) is $137.16 \text{ cm} = 1371.6 \text{ mm}$

Source to sample surface distance (DSO) = $66.58 \text{ cm} = 665.8 \text{ mm}$

Air Gap (DAG) = $66.58 \text{ cm} = 665.8 \text{ mm}$

Sample is 4 cm thick, and the center of the sample i-e 2 cm is placed at 68.58 cm which is the axis of rotation. So the distance of axis of rotation to detector = $68.58 \text{ cm} = 685.8 \text{ mm}$

This means that the source to sample distance is $(68.58 - 2) = 66.58 \text{ cm}$

This also means that the air gap is $(137.16 - (66.58 + 2)) = 66.58 \text{ cm} = 668.8 \text{ mm}$.

The detector pixel size is $0.055 \text{ mm} \times 0.055 \text{ mm}$.

