

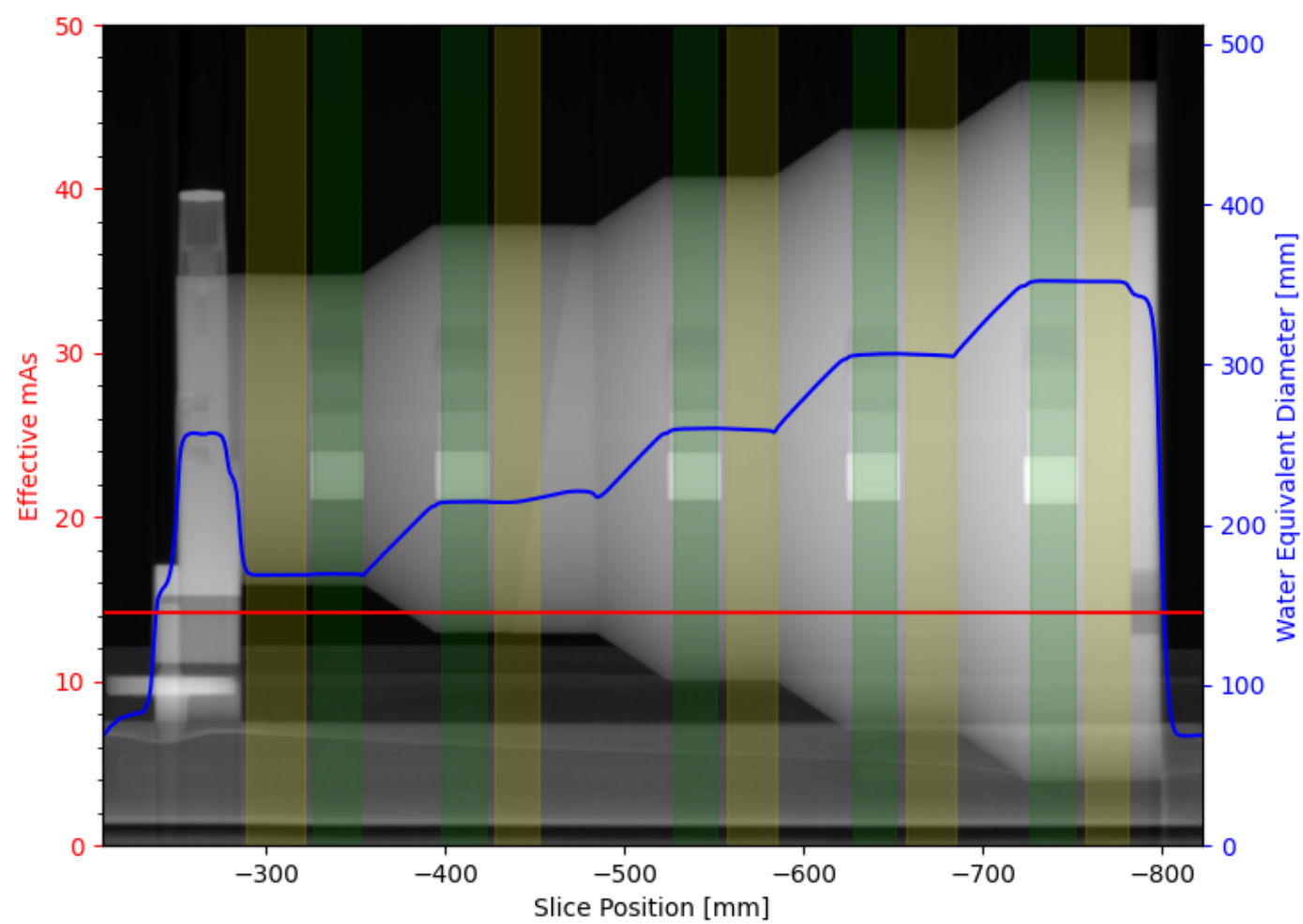
imQuest Mercury Phantom Report

Report generated on 19-Jul-2023 15:08

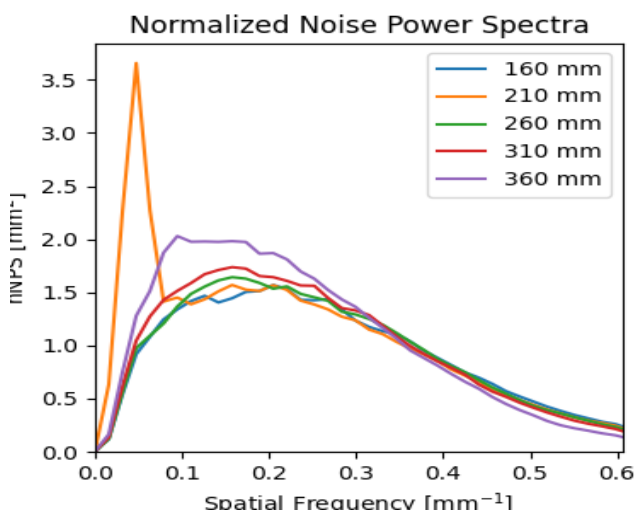
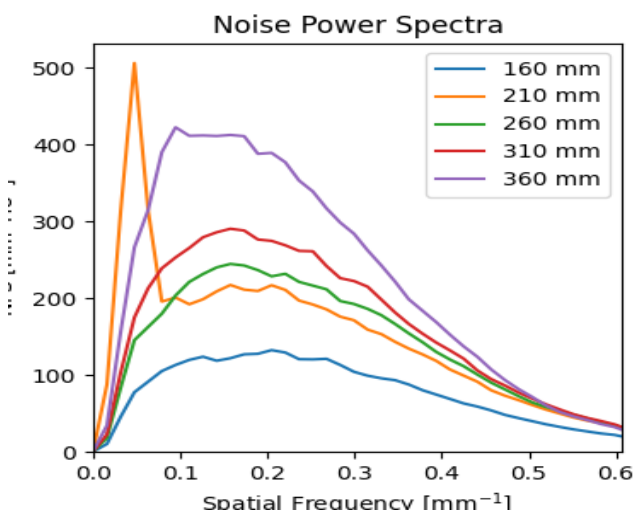
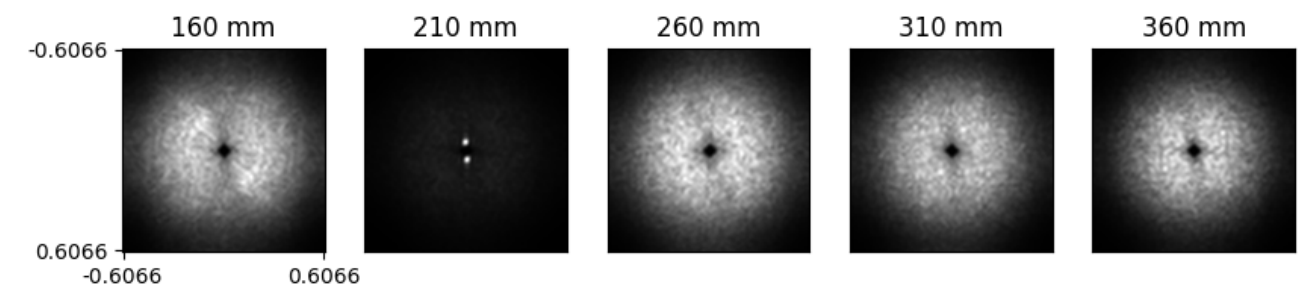
Series Info

InstitutionName: ACTI Community Hospital
Manufacturer: SIEMENS
ManufacturerModelName: SOMATOM Force
StationName: monoplusDECT
SoftwareVersion: syngo CT VB20A
PatientName: John Doe
StudyDescription: Phantom measurement
SeriesDescription: #PP DS_5mGy_R1 1.5 Qr40 3 Monoenergetic Plus 80 keV#0
StudyDate: 01-Jan-1970
SeriesDate: 01-Jan-1970
AccessionNumber: None
SeriesNumber: 112
AcquisitionNumber: 11
FilterType: FLAT
KVP: 100
XrayTubeCurrent: 17
ExposureTime: 500
SpiralPitchFactor: 0.6
FocalSpot: 0.8
DataCollectionDiameter: 500
ReconstructionDiameter: 422
PixelSpacing: [0.82422, 0.82422]
ConvolutionKernel: Qr40d\3
SliceThickness: 1.5
SeriesInstanceUID: SI-UID
IrradiationEventUID: IE-UID
SeriesImageSize: [512, 512, 615]
SliceInterval: -1

Tube Current Profile

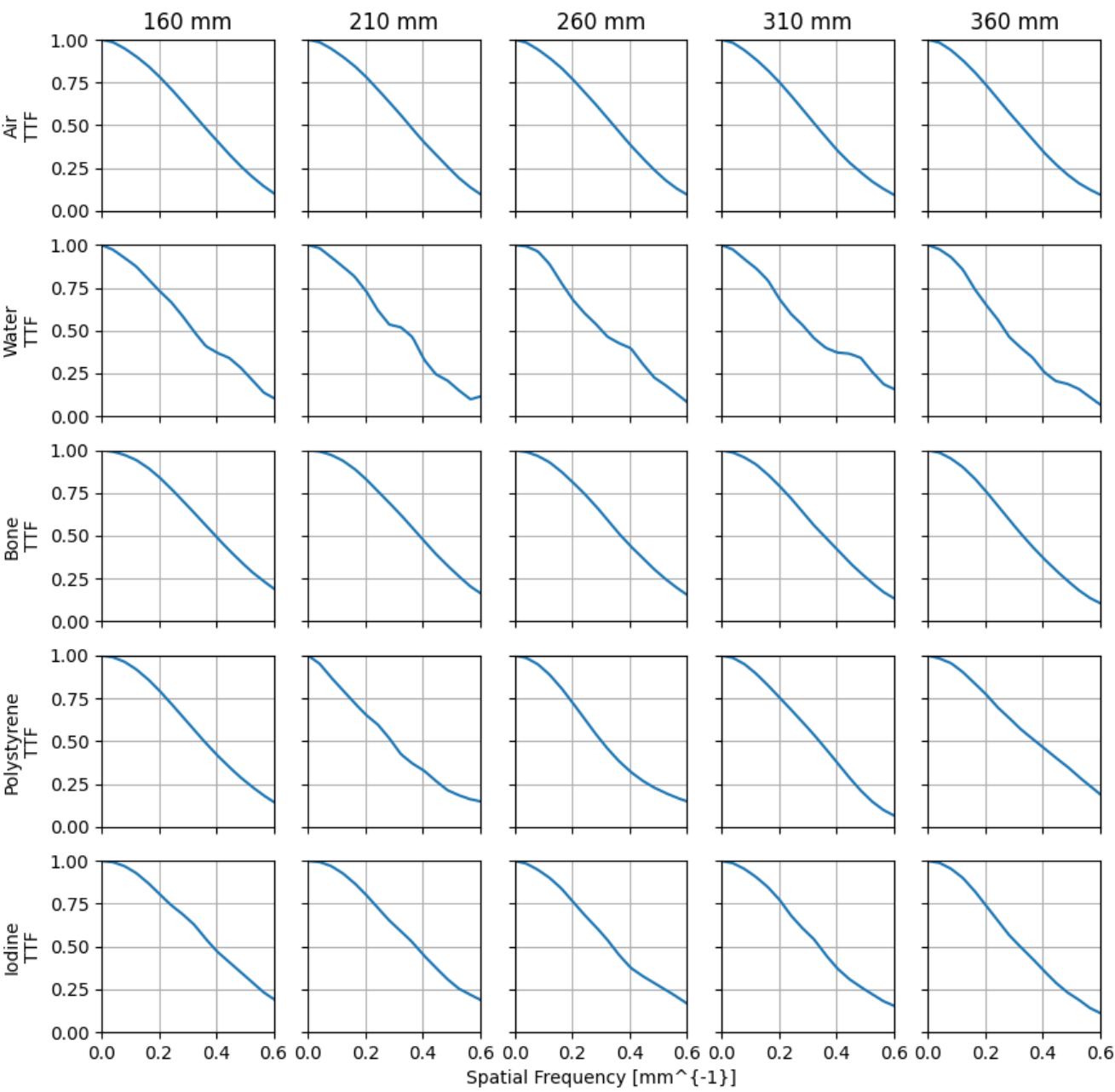


Noise Properties



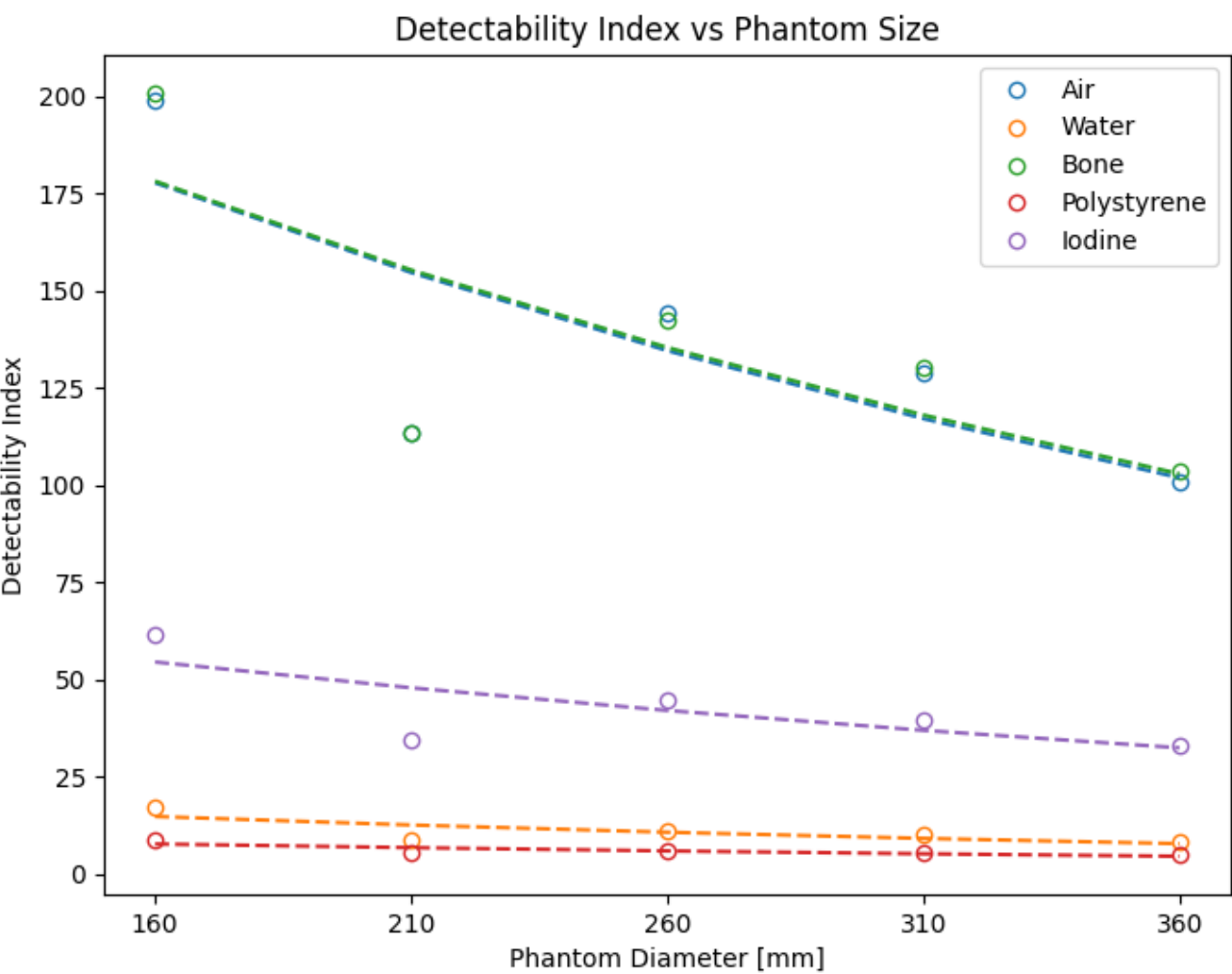
Phantom Diameter [mm]	Noise [HU]	fpeak [mm ⁻¹]	fav [mm ⁻¹]
160	9.2	0.19	0.27
210	11.8	0.06	0.23
260	12.2	0.16	0.27
310	12.9	0.16	0.26
360	14.4	0.13	0.24

Resolution Properties



Insert	Phantom Diameter [mm]	Contrast [HU]	f_10 [mm ⁻¹]	f_50 [mm ⁻¹]
Air	160 mm	-876.2	0.60	0.35
Air	210 mm	-898.0	1.77	0.35
Air	260 mm	-888.4	1.58	0.34
Air	310 mm	-884.0	1.95	0.33
Air	360 mm	-852.4	1.90	0.32
Water	160 mm	76.8	1.41	0.32
Water	210 mm	72.1	1.66	0.34
Water	260 mm	68.3	1.17	0.30
Water	310 mm	70.8	1.13	0.30
Water	360 mm	72.9	1.89	0.27
Bone	160 mm	855.4	0.69	0.40
Bone	210 mm	859.9	1.40	0.39
Bone	260 mm	854.4	1.33	0.37
Bone	310 mm	869.6	1.45	0.36
Bone	360 mm	859.2	0.61	0.33
Polystyrene	160 mm	37.6	1.32	0.36
Polystyrene	210 mm	46.8	1.57	0.29
Polystyrene	260 mm	36.6	0.69	0.30
Polystyrene	310 mm	36.6	1.76	0.34
Polystyrene	360 mm	40.7	1.76	0.37
Iodine	160 mm	266.0	1.67	0.39
Iodine	210 mm	267.2	0.68	0.38
Iodine	260 mm	276.1	0.66	0.34
Iodine	310 mm	266.2	1.00	0.34
Iodine	360 mm	277.4	1.09	0.32

Detectability Index vs Phantom Size



Insert	a	b	residual	D'_160	D'_210	D'_260	D'_310	D'_360
Air	277.5	-2.783e-03	12.67	199.0	113.6	144.1	128.9	101.0
Water	24.6	-3.201e-03	14.77	17.0	8.8	10.9	10.1	8.3
Bone	276.4	-2.745e-03	12.65	200.8	113.4	142.6	130.2	103.5
Polystyrene	11.8	-2.645e-03	10.17	8.6	5.3	5.9	5.4	4.9
Iodine	82.6	-2.597e-03	13.06	61.7	34.6	44.9	39.5	33.3

imQuest Version Info

Repository	commit	branch
imquest	b70c87a1fb4e69b9abb722fd4ab8e41ce83182da	master
ImageQuality	8340faf55aeac978ea882c6754ab6311834848fb	master
imtool3D	758dc867ef82ca77b49d22b085b6d6bca474fa85	master
UsefulTools	48c1081179086dfa5cb94dddbdd29992e391ec21	master