

Imager Quality Analysis

Department: South Bay Radiation Oncology

Machine Name: SB-LA-1

Data Acquired: 1/20/2022

Vendor: Varian

Data Analyzed: 1/21/2022

Model: Truebeam

Serial #: - -

Quick Select: SB_LA1_CBCT_Pelvis • Imager: Varian OBI • Energy: NA

Phantom: Catphan504 Pelvis • Phantom Template: Catphan 504 • Phantom Serial #:1924

Summary

Result category	Results summary
Uniformity And Noise	All results in acceptable range
HU Constancy	All results in acceptable range
Spatial Resolution	One or more results in error range
Geometric Distortion	One or more results in alert range
Slice Thickness	One or more results in alert range
Low Contrast Visibility	One or more results in error range
Low Contrast Detectability	One or more results in error range



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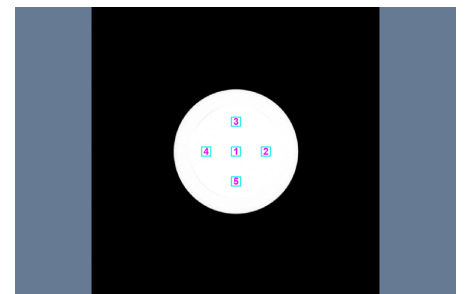
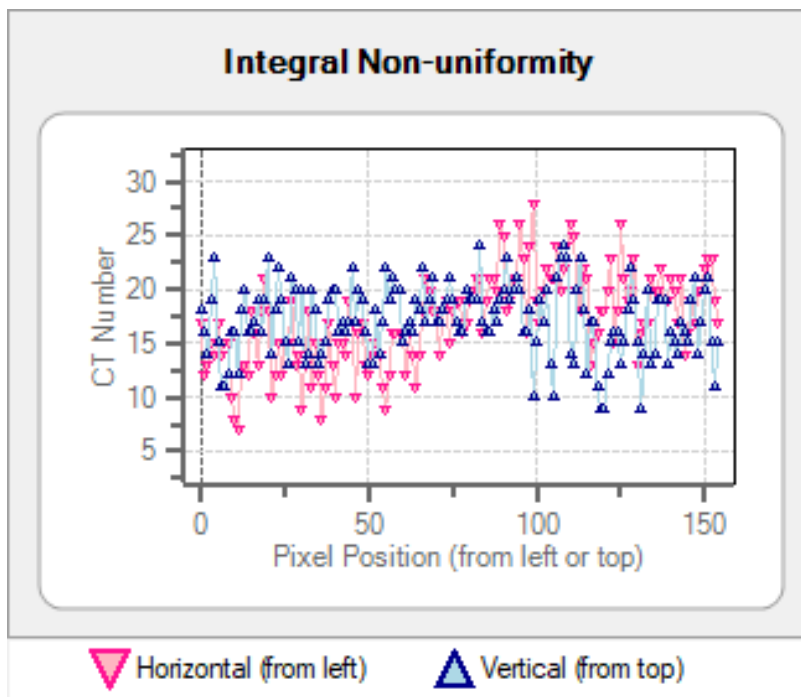
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Uniformity and Noise

ROI	CT # Uniformity	Image Noise
1	18.889	4.443
2	20.498	6.083
3	17.547	5.843
4	13.810	5.614
5	16.204	5.376

Integral non-uniformity

Vertical	Horizontal
0.455	0.600



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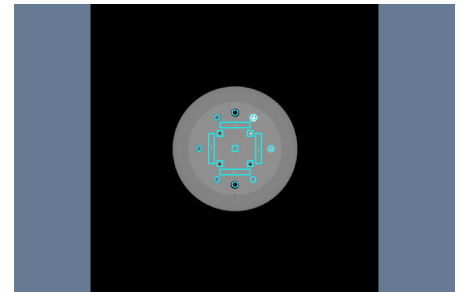
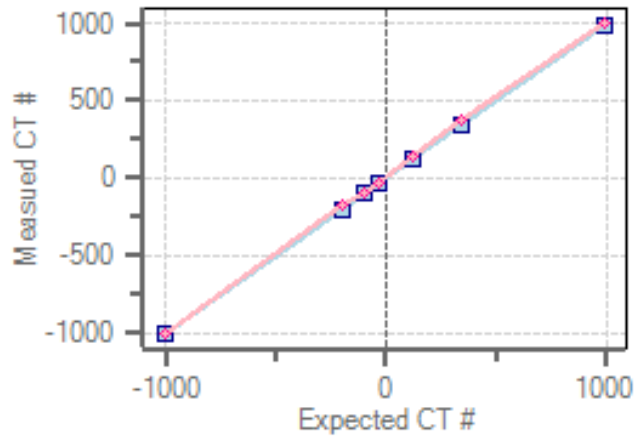
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HU Constancy

ID	Material	Measured (HU)	Expected (HU)
1	Air	-999.513	-1000.000
2	PMP	-180.564	-200.000
3	LDPE	-89.462	-100.000
4	Polystyrene	-28.872	-35.000
5	Air	-999.231	-1000.000
6	Acrylic	137.692	120.000
7	Delrin	378.577	340.000
8	Teflon	994.128	990.000

Measured vs Expected



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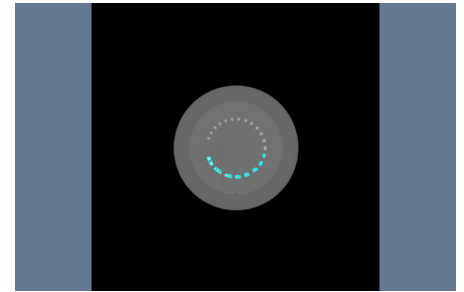
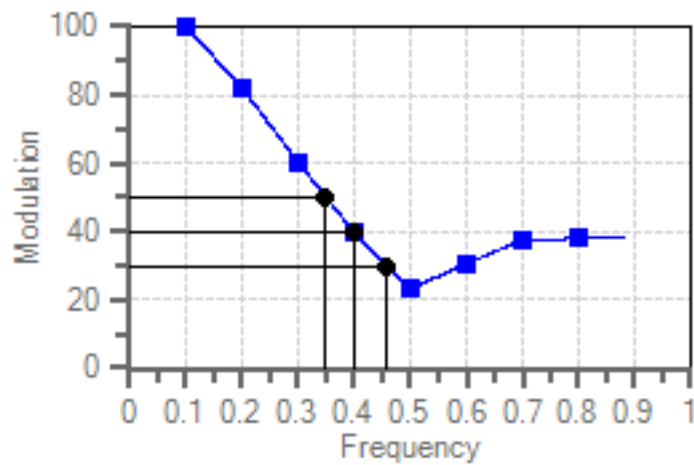
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Spatial Resolution

F50 (lp/mm) | F40 (lp/mm) | F30 (lp/mm)

F50 (lp/mm)	F40 (lp/mm)	F30 (lp/mm)
0.350	0.398	0.459

RMTF Curve



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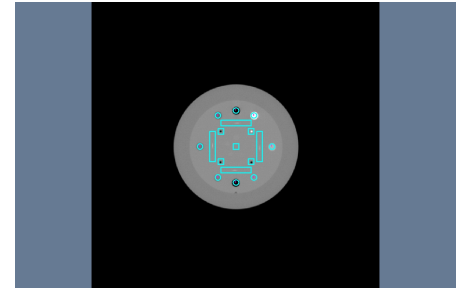
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Geometric Distortion

Position 1	Position 2	Measured distance	Expected distance
Bottom Left	Bottom Right	49.949	50.000
Bottom Right	Top Right	49.941	50.000
Top Right	Top Left	49.033	50.000
Top Left	Bottom Left	49.042	50.000



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Slice Thickness

Bar	Calculated Thickness (mm)	Expected Thickness (mm)
Bottom	2.372	1.988
Right	2.593	1.988
Top	2.154	1.988
Left	2.010	1.988
Mean	2.282	1.988

Low Contrast Visibility

Material 1	Material 2	LCV
Polystyrene	LDPE	0.553



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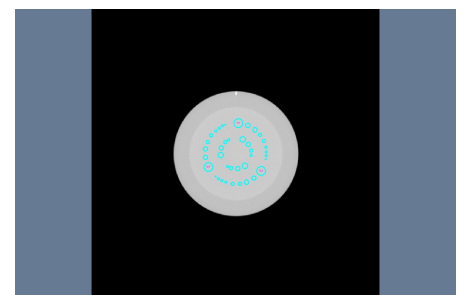
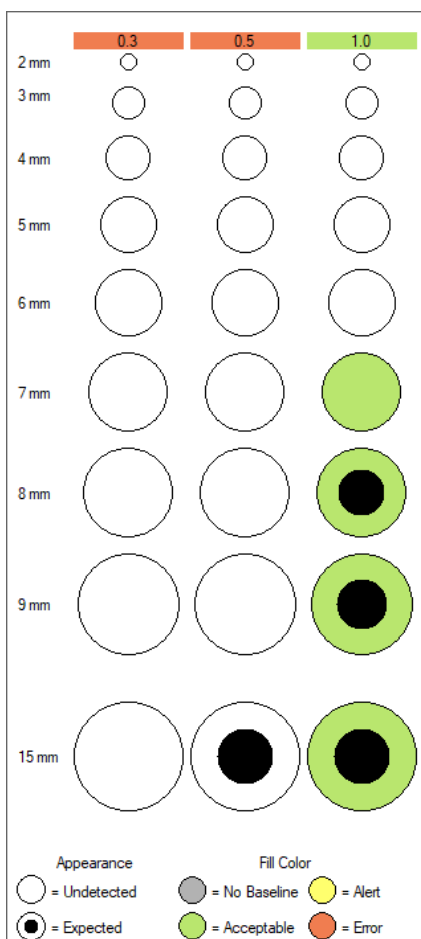
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Low Contrast Detectability

Contrast Level	Lowest Detected (mm)	Percent Detected	C x D (of Low Detected)
0.3	--	0.0	--
0.5	--	0.0	--
1.0	7.0	44.4	40.1



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