

Report

Catphan Hospital: GE

CATPHAN 700

Friday March 6th 2020

performed by **Phantom Lab** at 14:51 EST

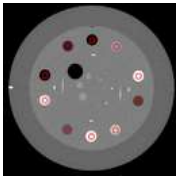
No user has signed off on this report

46 out of 51 tests completed.

[5 incomplete tests](#)

Comments:

Sensitometry ○



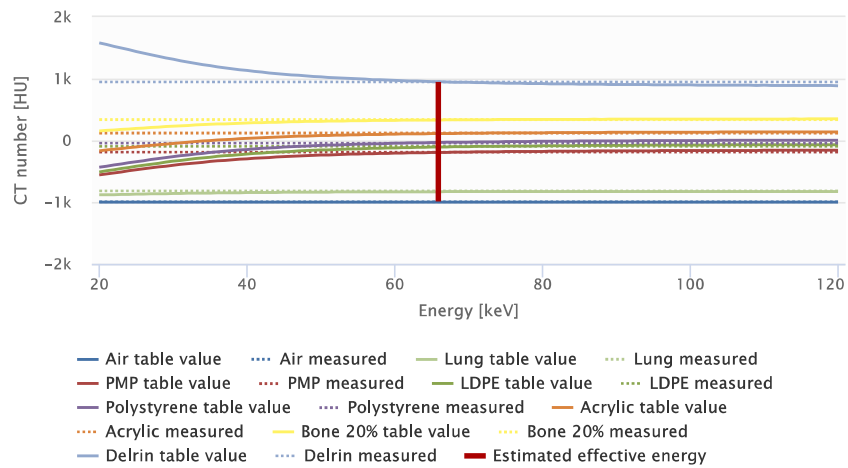
File name: **29660644**
 Series description:
1.2mm 1pitch
 Module ID: **CTP682**
 Total collimation width: **40 mm**
 kVp: **120**
 mA: **315**
 Time: **1000 ms**
 Slice thickness: **1.25 mm**
 Recon FOV: **210 mm**
 Recon filter: **STANDARD**
 Scan mode: **HELICAL MODE**
 CTDI volume: **N/A mGy**
 Spiral pitch factor: **0.984**
 Images: **1.2mm 1pitch**

Air + Add Comment	-994 HU
Lung foam + Add Comment	-818 HU
PMP + Add Comment	-188 HU
LDPE + Add Comment	-97 HU
Polystyrene + Add Comment	-43 HU
Acrylic + Add Comment	119 HU
Hydroxyapatite 20% + Add Comment	232 HU
Delrin + Add Comment	337 HU
Hydroxyapatite 50% + Add Comment	702 HU
Teflon + Add Comment	947 HU
Contrast scale + Add Comment	0.00020 $\text{cm}^2\text{HU}^{-1}$

Sensitometry plot + Add Comment

Series description: 1.2mm 1pitch

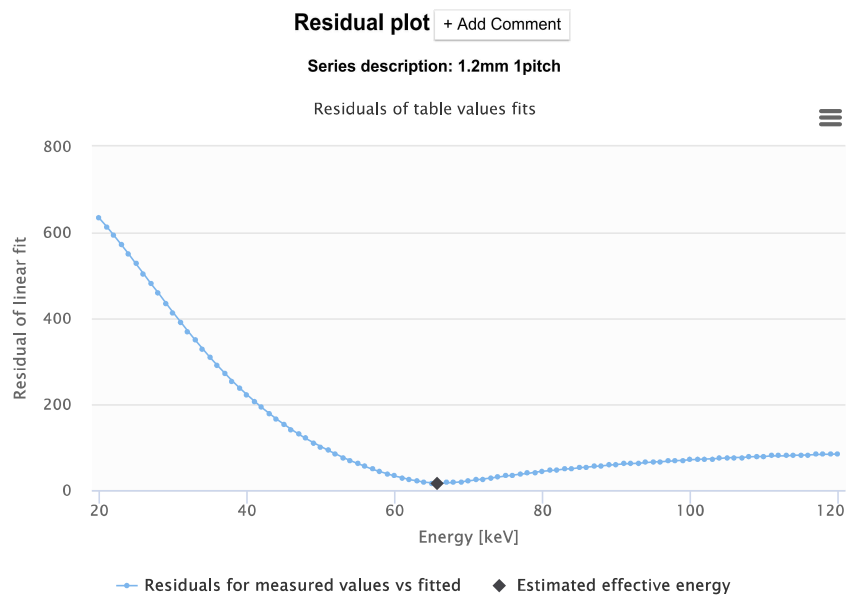
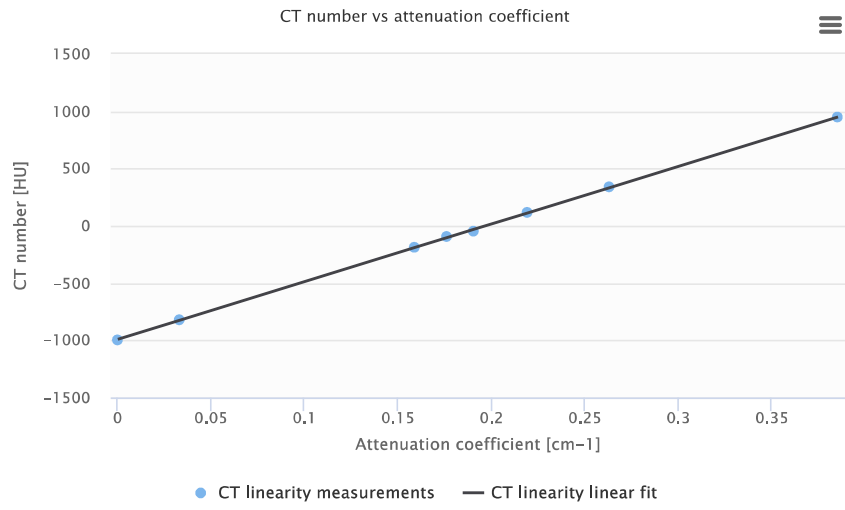
CT numbers vs estimated keV from table per material



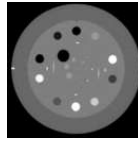
Effective energy + Add Comment	66 keV
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Linearity plot + Add Comment

Series description: 1.2mm 1pitch

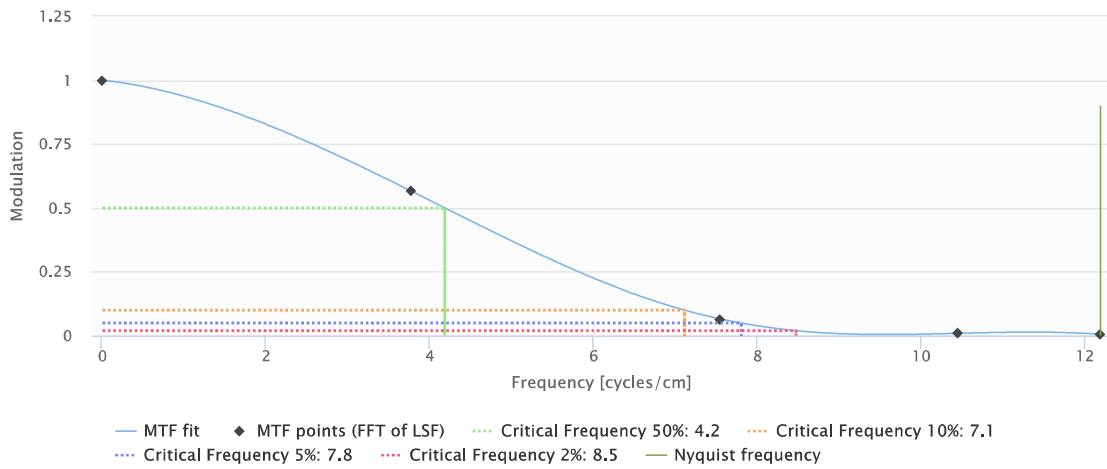


Modulation transfer function (MTF) from upper bead + Add Comment



File name: 29660644
 Series description: 1.2mm 1pitch
 Module ID: CTP682
 Total collimation width: 40 mm
 mA: 315
 Time: 1000
 kVp: 120
 Slice thickness: 1.25 mm
 Scan mode: HELICAL MODE
 CTDI volume: N/A mGy
 Spiral pitch factor: 0.984 Images

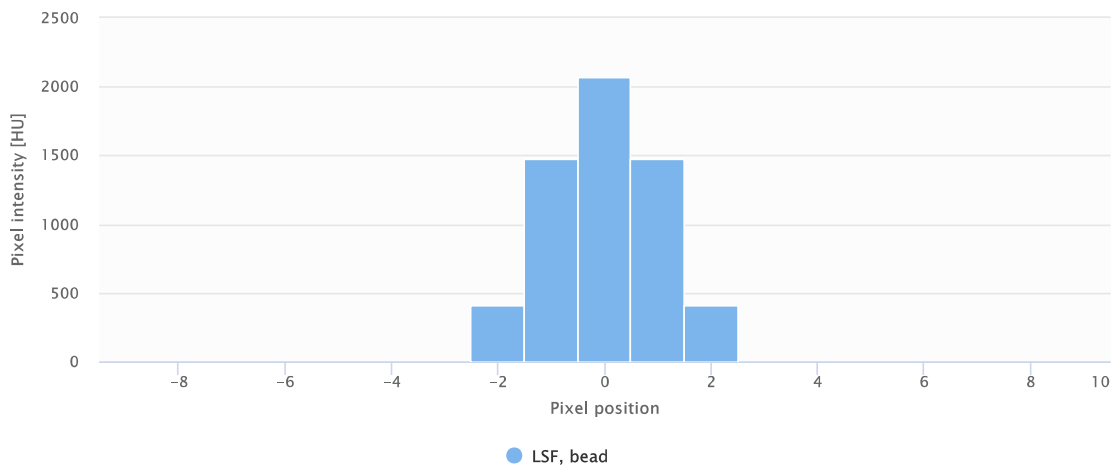
Modulation Transfer Function (upper bead)



Line spread function (LSF) from upper bead + Add Comment

Series description: 1.2mm 1pitch

Line Spread Spread (upper bead)

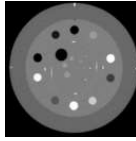


Critical frequency upper bead + Add Comment

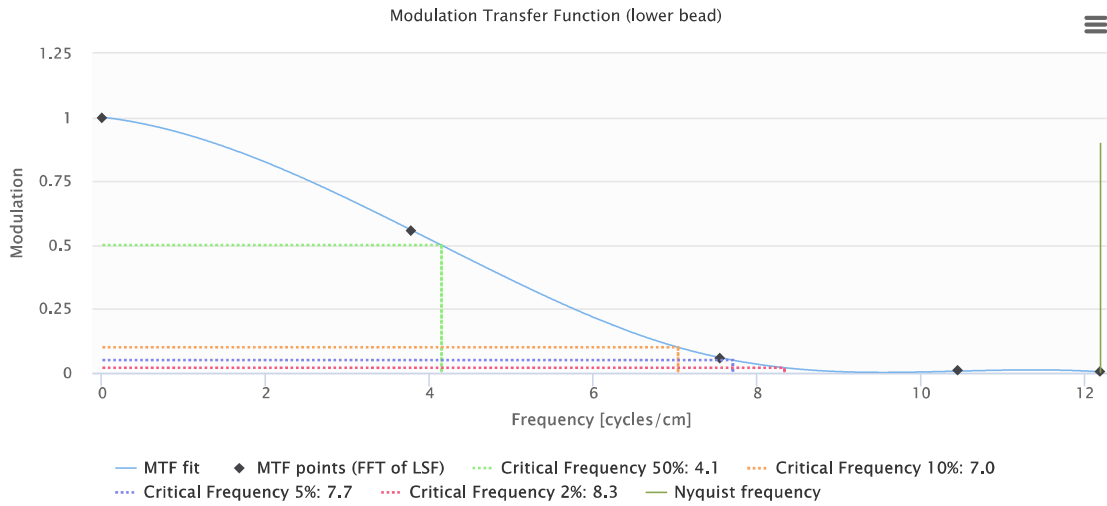
Series Description: 1.2mm 1pitch

Field of View mm	Reconstruction filter	50% cycles/cm	10% cycles/cm	5% cycles/cm	2% cycles/cm

Modulation transfer function (MTF) from lower bead [+ Add Comment](#)

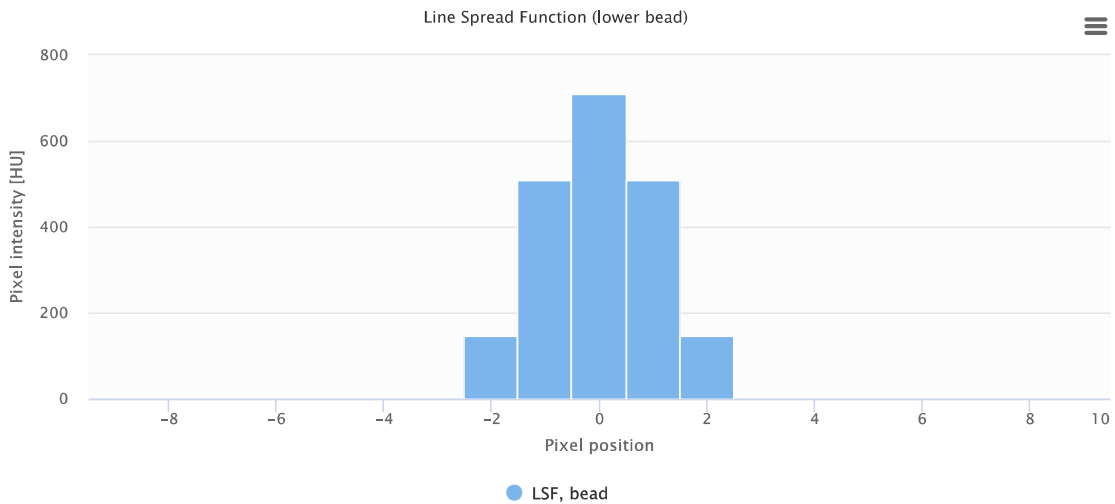


File name: 29660655
 Series description: 1.2mm 1pitch
 Module ID: CTP682
 Total collimation width: 40 mm
 mA: 315
 Time: 1000
 kVp: 120
 Slice thickness: 1.25 mm
 Scan mode: HELICAL MODE
 CTDI volume: N/A mGy
 Spiral pitch factor: 0.984Images



Line spread function (LSF) from lower bead [+ Add Comment](#)

Series description: 1.2mm 1pitch

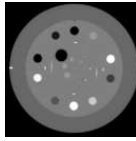


Critical frequency lower bead [+ Add Comment](#)

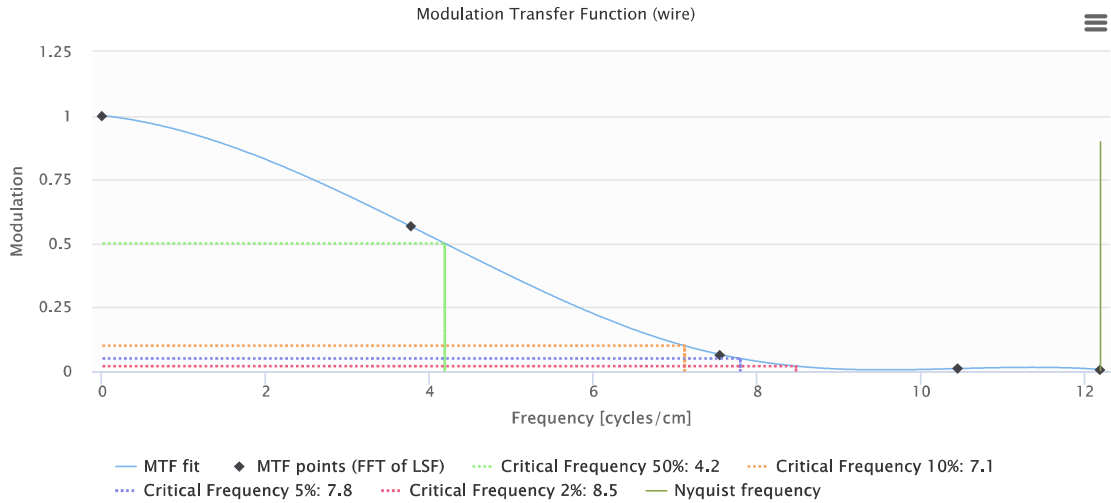
Series Description: 1.2mm 1pitch

Field of View mm	Reconstruction filter	50% cycles/cm	10% cycles/cm	5% cycles/cm	2% cycles/cm
210	STANDARD	4.14	7.03	7.70	8.33

Modulation transfer function (MTF) from wire + Add Comment

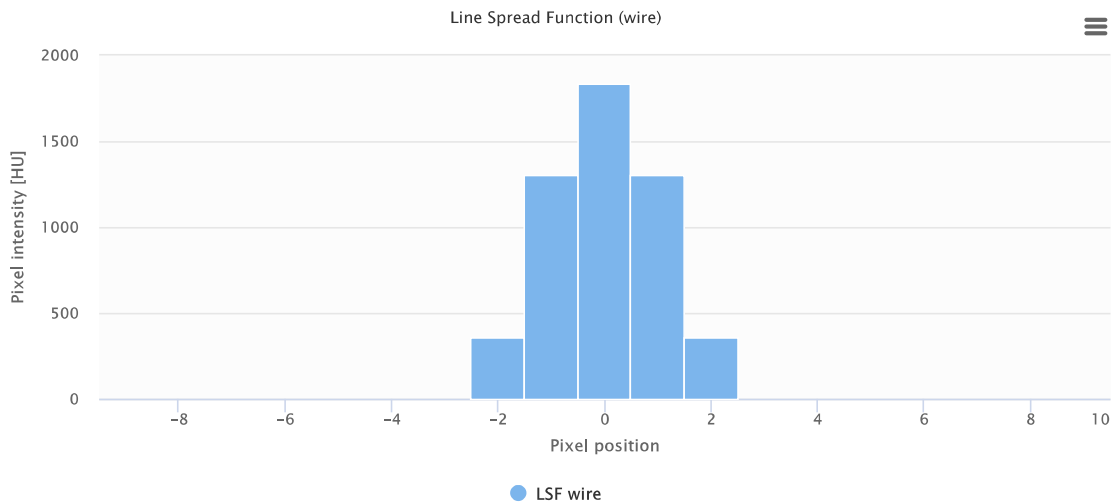


File name: 29660644
 Series description: 1.2mm 1pitch
 Module ID: CTP682
 Total collimation width: 40 mm
 mA: 315
 Time: 1000
 kVp: 120
 Slice thickness: 1.25 mm
 Scan mode: HELICAL MODE
 CTDI volume: N/A mGy
 Spiral pitch factor: 0.984Images



Line spread function (LSF) from wire + Add Comment

Series description: 1.2mm 1pitch



Critical frequency wire + Add Comment

Series Description: 1.2mm 1pitch

Reconstruction filter	Field of View mm	50% cycles/cm	10% cycles/cm	5% cycles/cm	2% cycles/cm
STANDARD	210	4.18	7.11	7.79	8.47

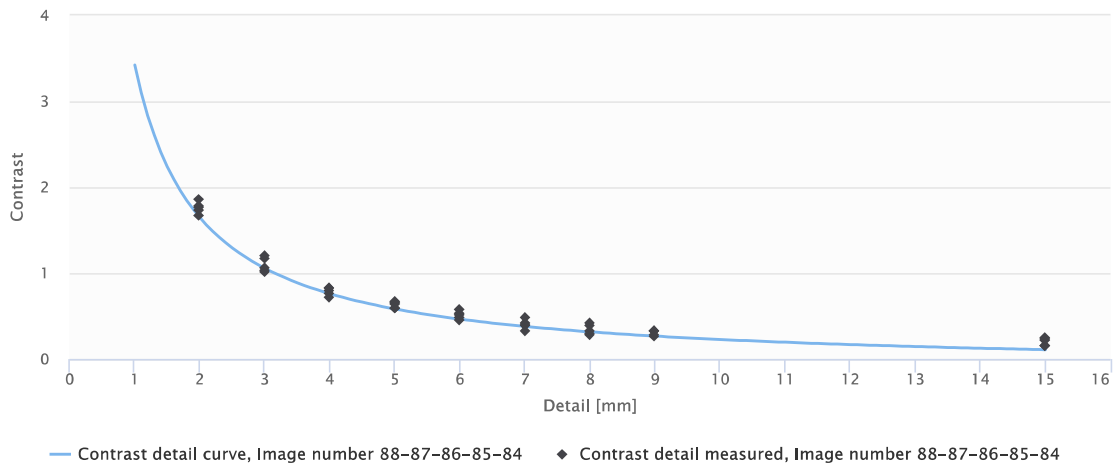
Low Contrast ○

Contrast detail plot + Add Comment



File name: **29659962**
 Series description: **1.2mm 1pitch**
 Module ID: **CTP515**
 Total collimation width: **40 mm**
 KVp: **120**
 Recon FOV: **210 mm**
 Scan mode: **HELICAL MODE**
 CTDI volume: **N/A**
 Spiral pitch factor: **0.984**Images

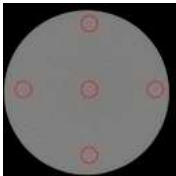
Contrast detail curve



Contrast detail values + Add Comment

Series Description: 1.2mm 1pitch

Image number	Reconstruction filter	Tube Current*time mAs	Slice thickness mm	Detail at 1% contrast mm	Detail at 0.5% contrast mm	Detail at 0.3% contrast mm
88-87-86-85-84	STANDARD	315.0	1.2	3.0	6.0	8.0

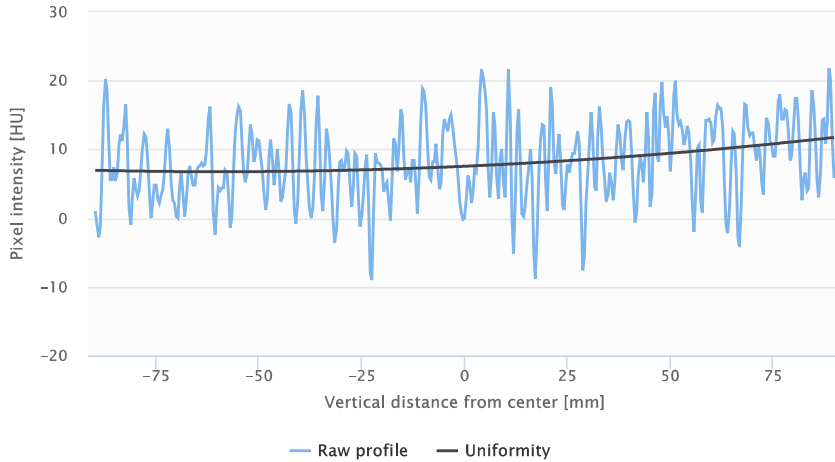


File name: **29659225**
 Series description:
1.2mm 1pitch
 Module ID: **CTP712**
 Total collimation width: **40 mm**
 kVp: **120**
 mA: **315**
 Time: **1000 ms**
 Recon FOV:
210 mm recon filter
 Scan mode: **HELICAL MODE**
 CTDI volume: **N/A mGy**
 Spiral pitch factor: **0.984**
 Images: **1.2mm 1pitch**

Vertical profile and the corresponding fitted curve [+ Add Comment](#)

Series description: 1.2mm 1pitch

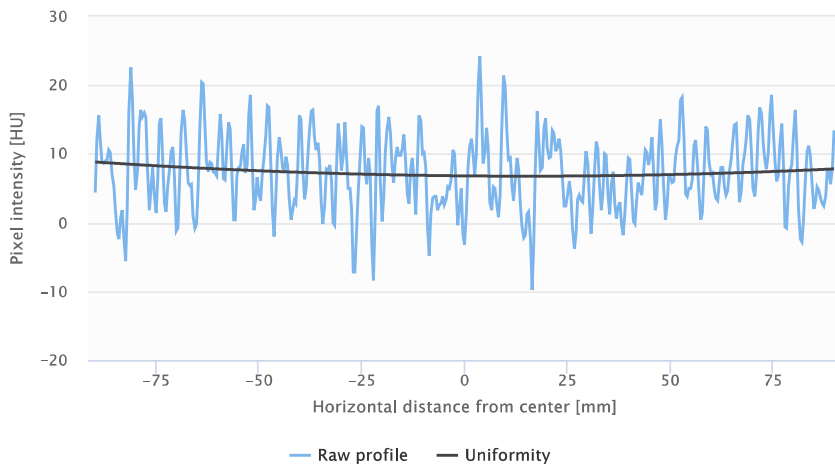
Vertical profile and the corresponding fitted curve



Horizontal profile and the corresponding fitted curve [+ Add Comment](#)

Series description: 1.2mm 1pitch

Horizontal profile and the corresponding fitted curve



Mean CT value center region [+ Add Comment](#)

Series Description: 1.2mm 1pitch

Image number	Reconstruction filter	Tube Current*time mAs	Slice thickness mm	Mean at center HU
21	STANDARD	315.0	1.2	6.97

Absolute differences from center in regions of interest [+ Add Comment](#)

Series Description: 1.2mm 1pitch

Image number	Reconstruction filter	Tube Current*time mAs	Slice thickness mm	Upper ROI HU	Right ROI HU	Lower ROI HU	Left ROI HU
21	STANDARD	315.0	1.2	1.10	1.96	2.78	2.45

Noise [+ Add Comment](#)

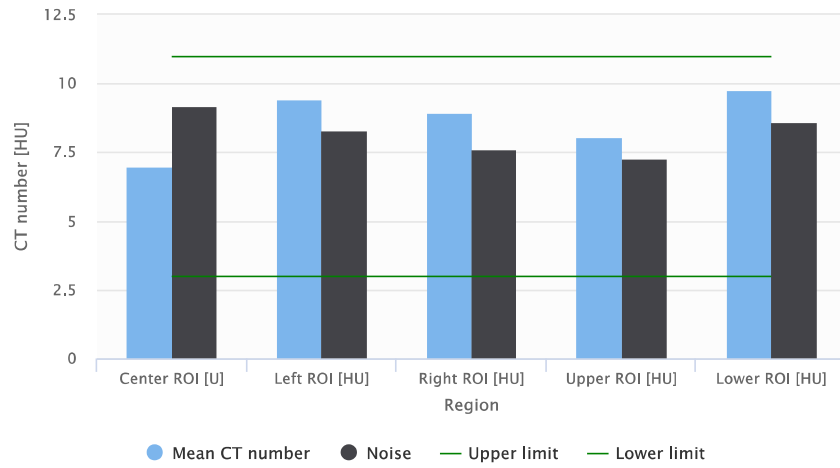
Series Description: 1.2mm 1pitch

Image number	Reconstruction filter	Tube Current*time mAs	Slice thickness mm	Noise HU
21	STANDARD	315.0	1.2	6.97

Noise and mean values plot [+ Add Comment](#)

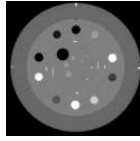
Series description: 1.2mm 1pitch

Noise and mean values per region



Slice Thickness ○

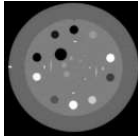
Slice thickness fine bead ramps



Series Description: 1.2mm 1pitch

Expected slice thickness mm	Right mm	Left mm	Average mm
1.25	1.19	1.42	1.30

Spatial Resolution and Orientation o



Measured pixel spacing

File name: **29660644**
Series description: **1.2mm 1pitch**
Module ID: **CTP682**
Total collimation width: **40 mm**
Pixel size: **[0.410]**
Recon filter: **STANDARD**
Scan mode: **HELICAL MODE**
CTDI volume: **N/A mGy**
Spiral pitch factor: **0.984Images**

Pixel spacing x <small>mm</small>	Pixel spacing y <small>mm</small>
0.41	0.41

Center of phantom

Series Description: 1.2mm 1pitch

Center x-coordinate <small>pixels</small>	Center y-coordinate <small>pixels</small>
263.000	253.000

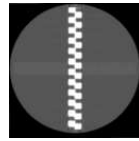
Rotation 0.920 °

Tilt -1.600 °

Yaw 0.180 °

Wave Analysis ○

Wave data header information + Add Comment



Critical frequencies, beads, wave module + Add Comment

Series Description: 1.2mm 1pitch

Field of View mm	Bead number	Reconstruction filter	50% cycles/cm	10% cycles/cm	5% cycles/cm	2% cycles/cm
210	1	STANDARD	4.00	6.90	7.50	8.10
210	2	STANDARD	4.30	7.20	8.00	8.70
210	3	STANDARD	4.30	7.50	8.20	8.90
210	4	STANDARD	4.00	6.80	7.50	8.00
210	5	STANDARD	4.10	6.90	7.60	8.10
210	6	STANDARD	4.00	6.80	7.40	8.00

Amplitudes for odd harmonics + Add Comment

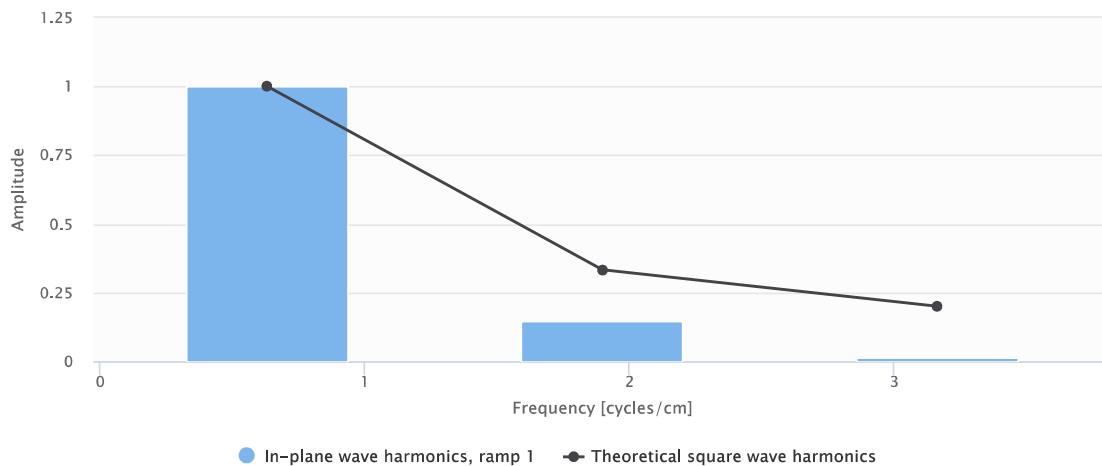
Series Description: 1.2mm 1pitch

Harmonics number	Ramp 1	Ramp 2
3	0.15	0.16
5	0.01	0.02

Harmonics plot from wave ramp 1 + Add Comment

Series description: 1.2mm 1pitch

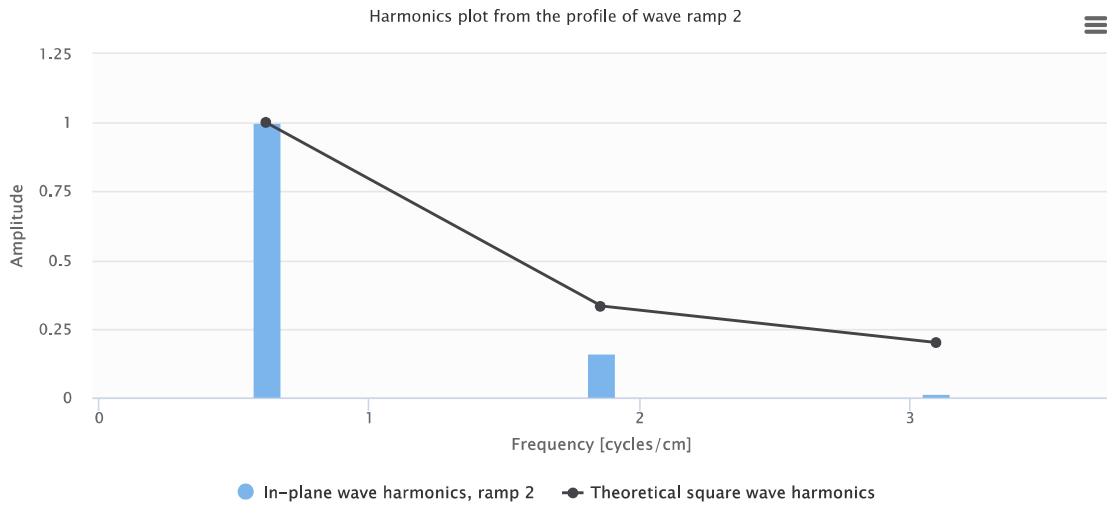
Harmonics plot from the profile of wave ramp 1



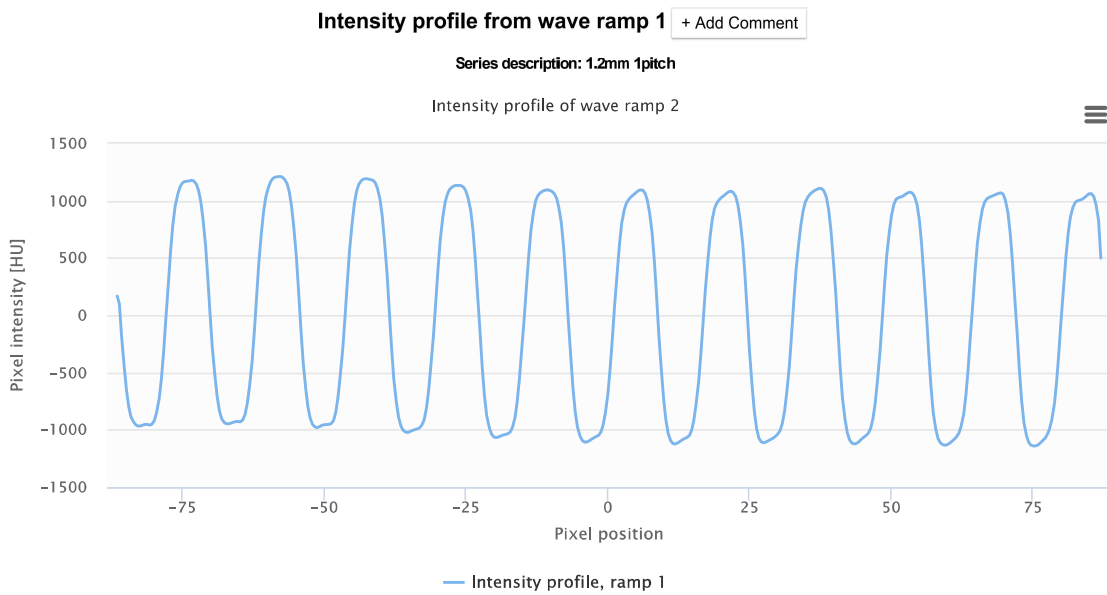
Series Description: 1.2mm 1pitch

Harmonics plot from wave ramp 2 + Add Comment

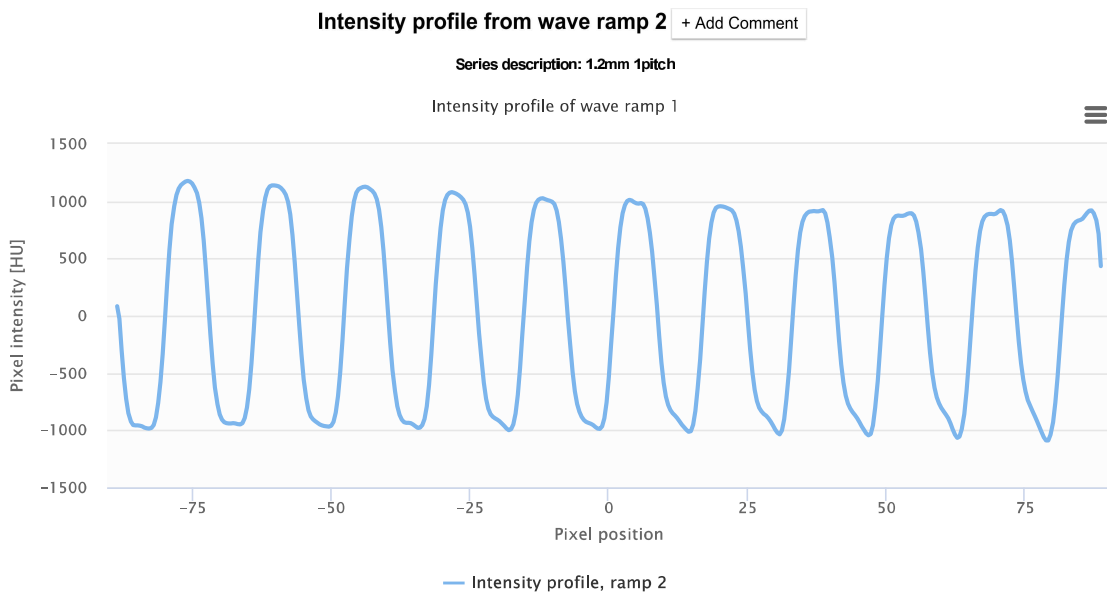
Series description: 1.2mm 1pitch



Series Description: 1.2mm 1pitch

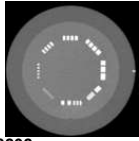


Series Description: 1.2mm 1pitch



Calculation Notes ○

Slices from the CTP714 module were identified. Currently, the service is not reporting information on the high resolution gauges as it is a subjective visual test. Please upload a slice from the CTP682 module including the MTF bead.



File name: **29660292**
Series description: **1.2mm 1pitch**
Module ID: **CTP714**
Total collimation width: **40 mm**
mA: **315**
Time: **1000**
kVp: **120**
Slice thickness: **1.25 mm**
Scan mode: **HELICAL MODE**
CTDI volume: **N/A mGy**
Spiral pitch factor: **0.984**Images

