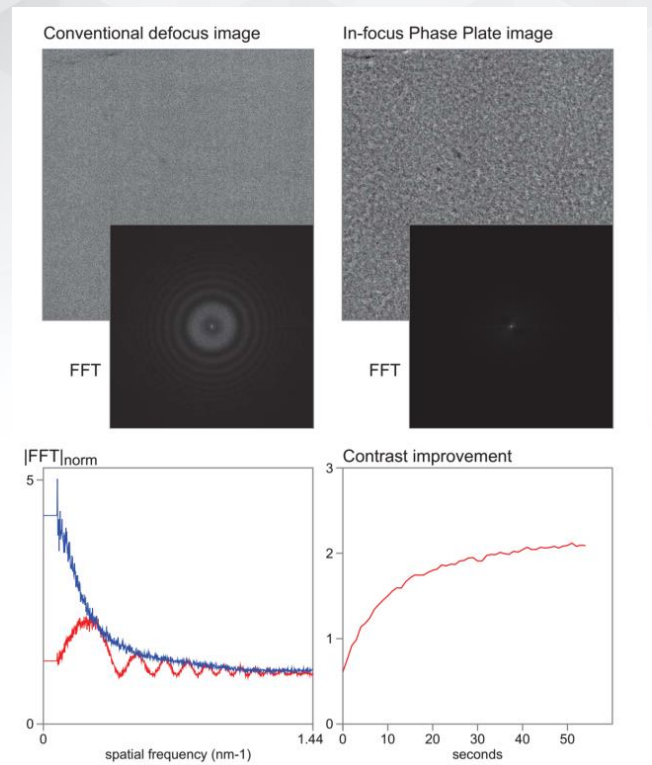


Phase Plate

Publication Type (default)

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Revision C • 7-Mar-18



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1 Phase Plate Slots inspection

1.1 Test Conditions

Note **A heated Phase Plate is a prerequisite for the SAT test, and the need for heating must be clearly stated at the beginning of the SAT test protocol.**

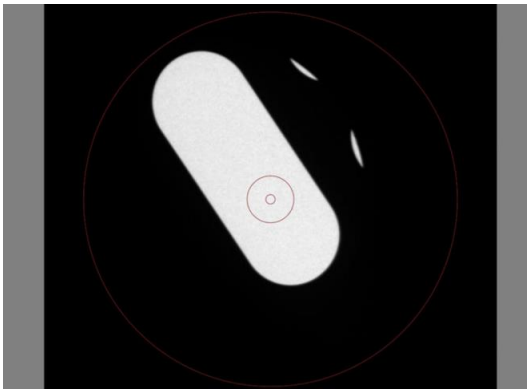
Microscope Settings	
Spot size	6
C1 aperture	2000 μm
C2 aperture	100 μm
SA	Retracted
Magnification	LM 40x (lowest possible)
Defocus	- 100 mm
Sample	No sample
CCD	Full area

1.2 Specifications / Measurements

- Check all slots for presence of film, center each slot so that the full slot is in the field of view. Take image by snapshot to TIA and store in local directory for reference under name PP#N.



Example of a failed test (PP#N_Fail)



Example of a passed test (PP#N_Pass)

Specification	Measured
Total number of slots that are covered with foil and are not broken shall be ≥ 5	<u>6</u>

Passed XXX Failed _____ Waived _____

11/12/2018 _____ **Date Completed**

Jeremy Scott _____ **Service Engineer**

_____ **Reviewed by Customer**



- Unary Proc.
- Binary Proc.
- FFT/IFFT
- Correlation
- Rot. Average
- Export Series
- Quant Setup
- EDX Quant
- AutoMap
- Lattice
- View Seq.
- Folder Export

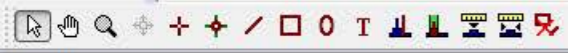
- Export
- Cancel
- Settings

Sum Spectra



Acquire CCD

- Series
- Histogram
- Display
- Data Info
- Object Info





- Unary Proc.
- Binary Proc.
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Sum Spectra



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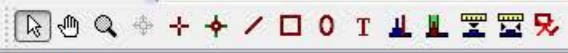
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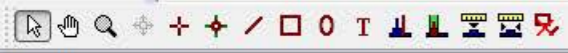
- Export
- Cancel
- Settings

Sum Spectra



Acquire CCD

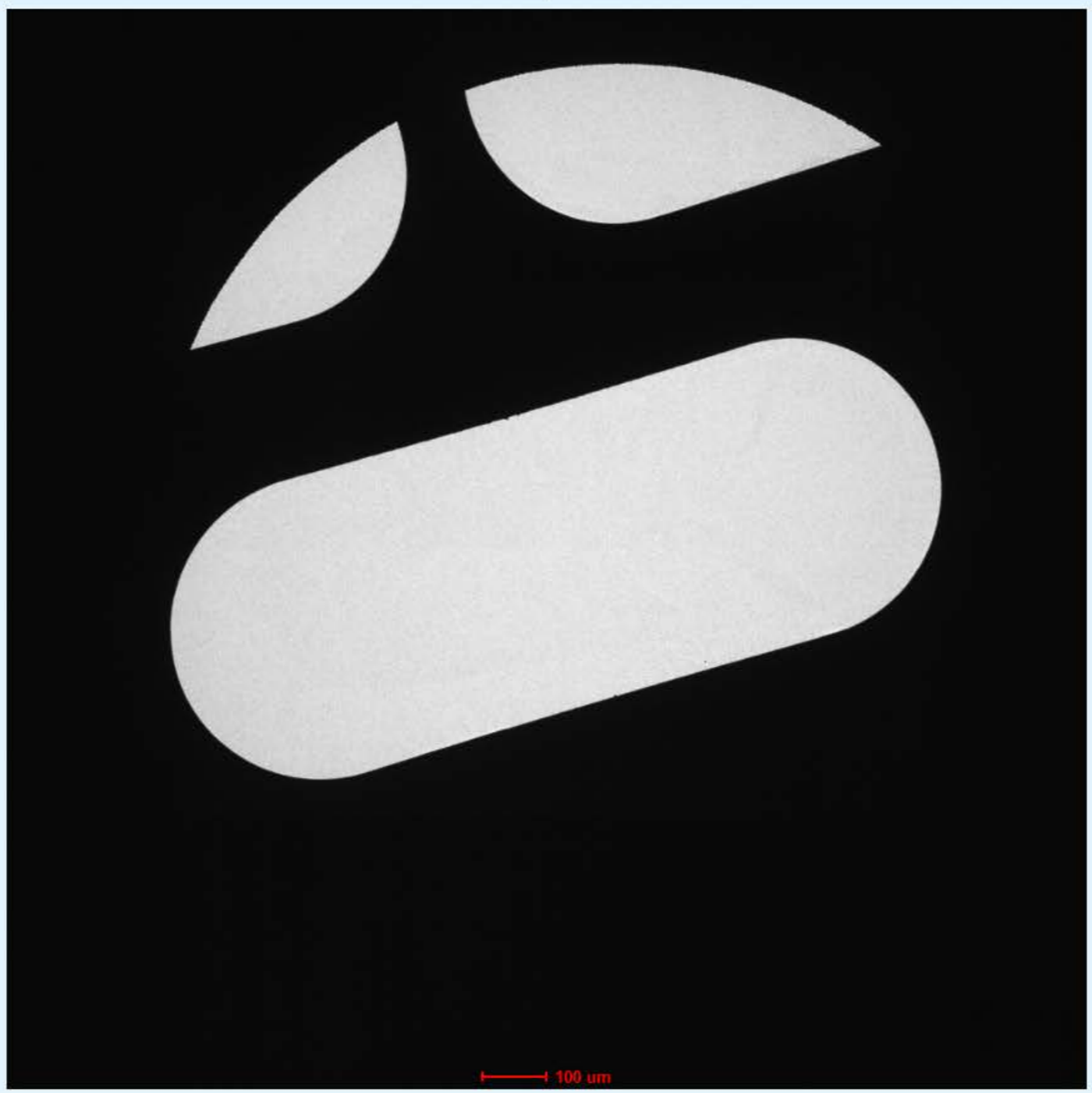
- Series
- Histogram
- Display
- Data Info
- Object Info



- Unary Proc.
- Binary Proc.
- FFT/IFFT
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- Export Series
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- Export
- Cancel
- Settings

Sum Spectra



Acquire CCD

- Series
- Histogram
- Display
- Data Info
- Object Info

2 Phase Plate Contrast Improvement

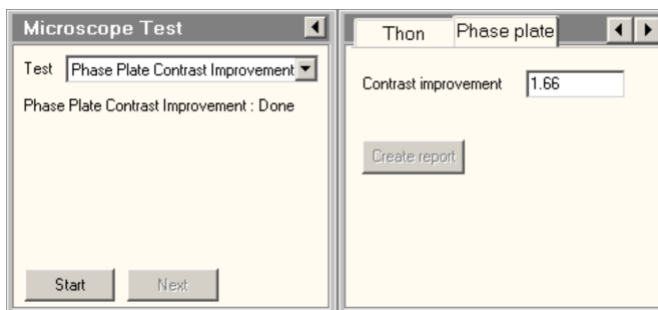
2.1 Test Conditions

Note **A heated Phase Plate is a prerequisite for the SAT test, and the need for heating must be clearly stated at the beginning of the SAT test protocol.**

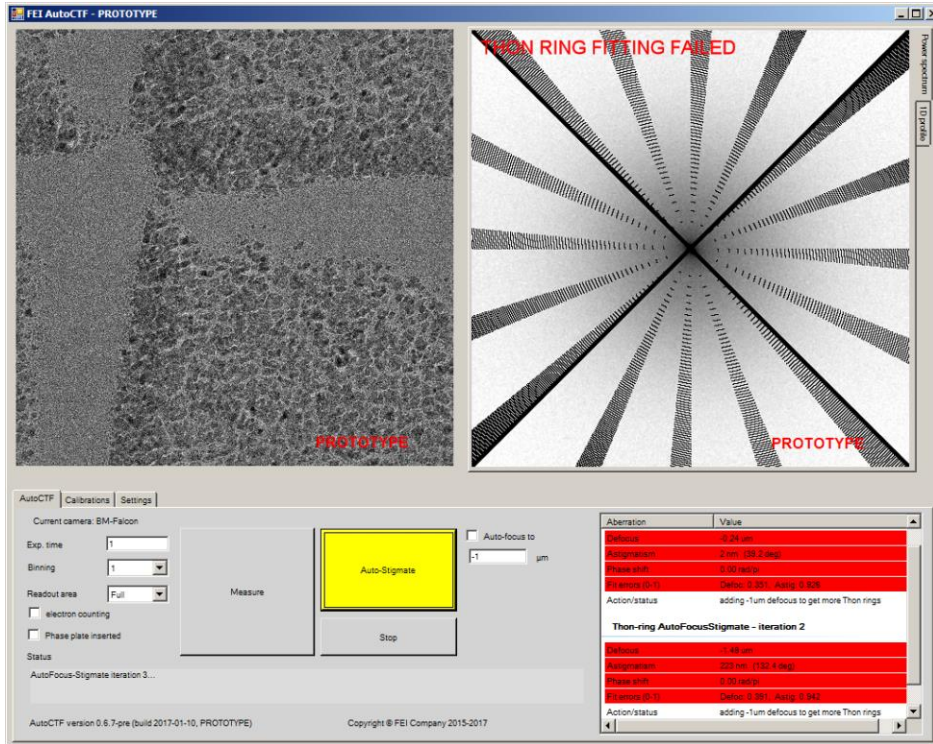
Microscope Settings	
High Tension	Highest HT possible
Exposure time	1 s
Spot size	4
C2 aperture	50 μm
Magnification	47k x
Defocus	0 mm
Sample	Quantifoil (no cryo sample)
CCD	Full area
Phase Plate conditioning	50 nC (With a screen current of 1nA you have to expose the phase plate for 50 seconds to get 50nC.)

2.2 Specifications / Measurements

- Execute the “Phase Plate Contrast Improvement test” at Microscope test and follow the work instructions.



Note AutoCTF can be used to correct for astigmatism. It is allowed to pause the Phase Plate SAT test and correct for astigmatism and then unpause the SAT test to continue.



Specification	Measured
Screen current [nA]	0.921
Condition time [sec]	15
Contrast Improvement > 1.4	1.66

Passed XXXXX Failed _____ Waived _____

11/14/2018 Date Completed

Jeremy Scott Service Engineer

_____ Reviewed by Customer

PHASE PLATE TEST

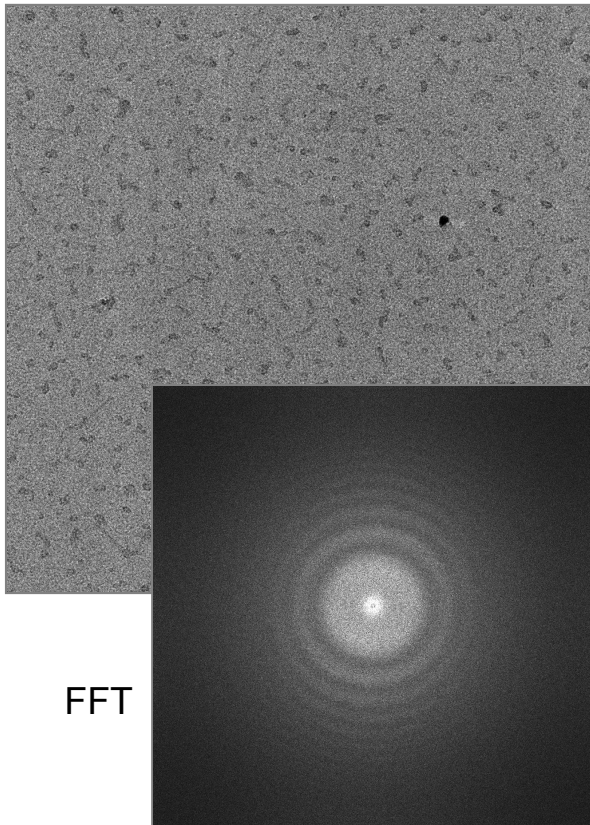


Measurement performed	11/14/2018
Microscope serial number	9950512
Microscope type	Talos Arctica G2
	Indiana University US

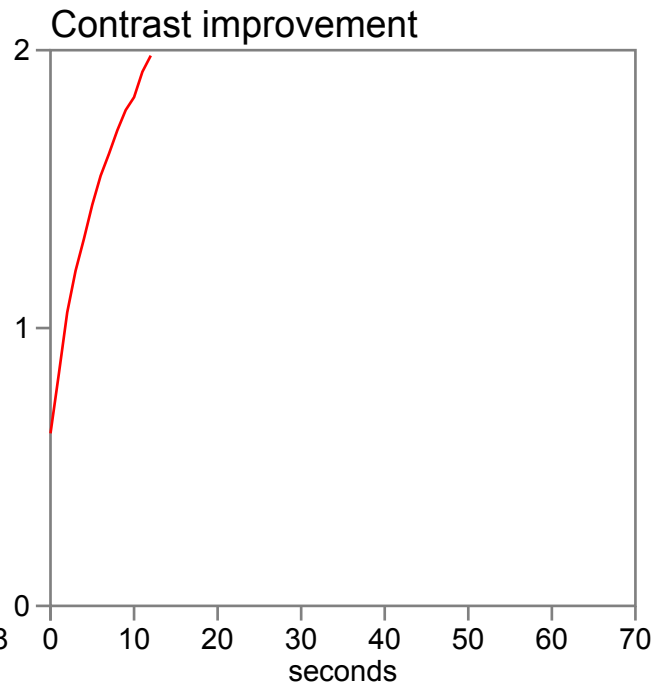
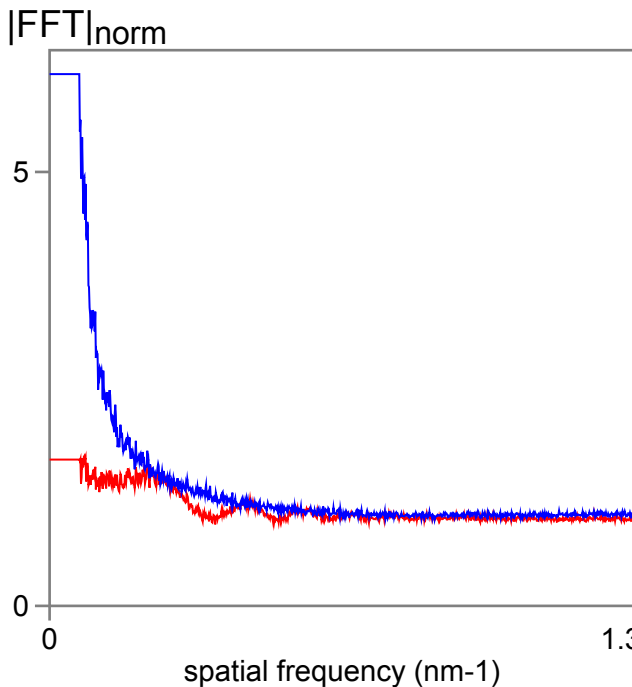
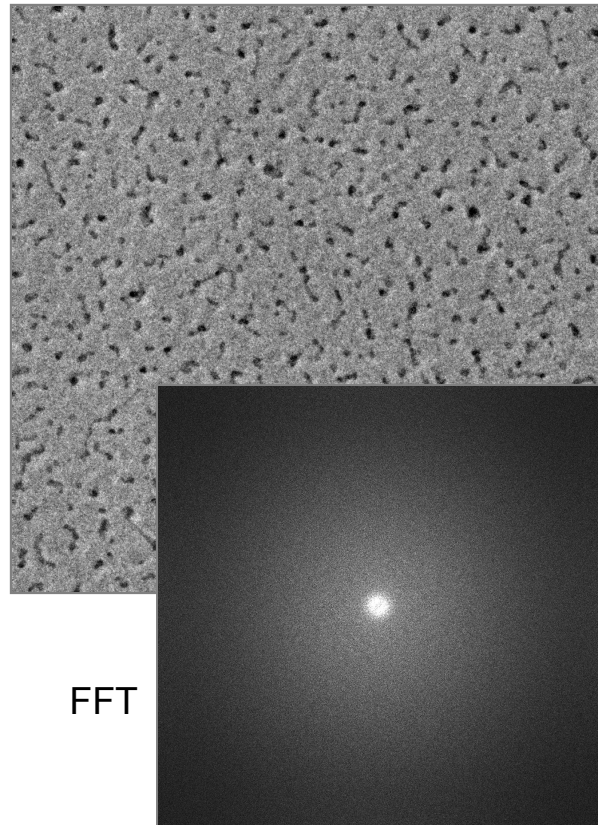
The Phase Plate test measures the activation time of the phase plate and the improved contrast of a sample with the phase plate.

Screen current (nA)	0.92
Conditioning time (s)	62
Contrast improvement	1.66

Conventional defocus image



In-focus Phase Plate image



3 SAT Certificate

Customer

Name

Indiana University

Address:

212 S. Hawthorne Dr

Simon Hall Room #041

Bloomington IN 47405

System

System series:

Talos Arctica

Serial Number:

9950512

Basic Instrument

Factory:

Service:

Configuration

Factory:

Service:

Signatures

This document certifies that the system with aforementioned serial number has been tested at the above mentioned facility and that the system has satisfactorily TESTED the performance specification as outlined in the above purchase order.

Service Engineer

Signature:

Date:

Customer

Signature:

Date:

4 Revision History

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Revision	Date	ECO number	Description of Changes
A	08-Sep-2014		Initial Release
B	09-Mar-2017		Migrated to AIT, SDR10780 Microscope settings updated
C	11-Sep-2017		SDR9912: Phase Plate slot inspection specification changed from ≥ 4 do ≥ 5 , rebranding

thermoscientific

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