

Model 730

# TOMOGRAPHY

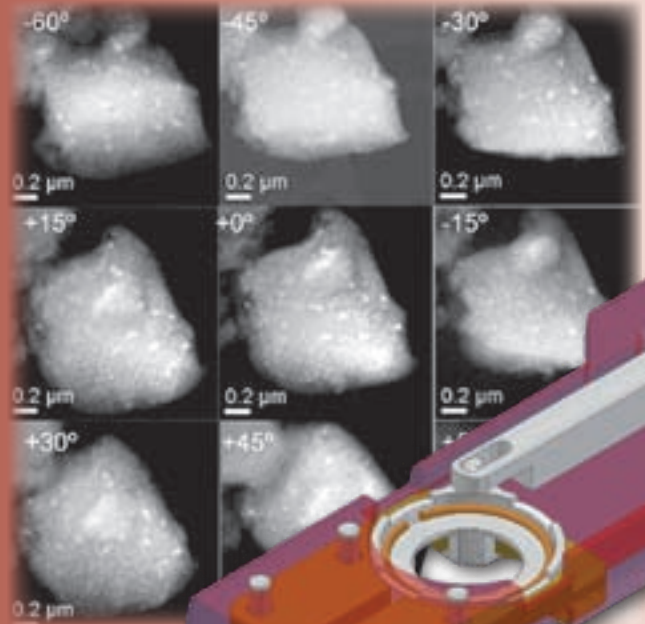
## Tomography-Acquisition Software

Part of a tilt series taken in a TEM using the Gatan 912 Holder. Images courtesy of Dr. Guenter Moebus, Dept. of Engineering Materials, University of Sheffield, United Kingdom.

### PRODUCT DESCRIPTION

Electron microscopy has emerged as an important tool for determining the three-dimensional (3D) structures of sample components. Recent advances in instrumentation, methods for data collection and techniques for computation are helping to improve the resolution and range of applications using this powerful technology.

The Gatan 3D tomography-acquisition software is a plug-in to the popular DigitalMicrograph™ software. This new 3D tomography software works with Gatan's complete line of room-temperature and cryo-transfer Tomography Holders and Gatan Imaging Filters or digital TEM cameras on most TEMs (with computer controlled sample stages, illumination and imaging systems). The Gatan Tomography software allows you to acquire a tilt series while correcting for specimen drift and any mechanical instabilities of the goniometer. The tomography series can be collected with live tracking or using a pre-acquired stage calibration. The latter mode of operation minimizes the electron dose on the specimen and reduces acquisition time. After acquisition, the series can be played backed as a movie to highlight the three dimensional structure of the specimen. It can also be exported for reconstruction by any of the public domain packages available.



927 Dual orientation tomography holder

912J High tilt tomography holder for URP® pole pieces

912P High tilt tomography holder for UltraTwin® pole pieces

914 Single tilt nitrogen cooled cryo-transfer tomography holder

916 Single tilt room temperature tomography holder

PRECISION PERFORMANCE PRODUCTIVITY



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## FEATURES/BENEFITS

### Acquisition

- Flexible set up for both novice and expert users.
- Use of live tracking of stage motion during data acquisition.
- Use of Tilt-Induced Shift (TIS) algorithm to correct for changes in focus.
- Tracking data can be used as a stage calibration in future acquisitions.
- Pause acquisition of tilt series to adjust stage X, Y, or Z position, image shift, beam shift or defocus.
- Manually assist the tracking algorithms when necessary.
- Image acquisition in TEM or EFTEM energy-filtered mode.
- Save and recall experiment setups.
- Store image data in RAM and/or directly to disk.

### Stage Calibration, Tracking

- Generate stage calibration from tracking data on any tilt series.
- Save and load stage calibrations easily.

### Tracking

- Track X, Y, and Z shifts, or use previously acquired stage calibration to minimize dose.
- Track and use stage calibration to improve ability to cope with large drifts.

### Visualization

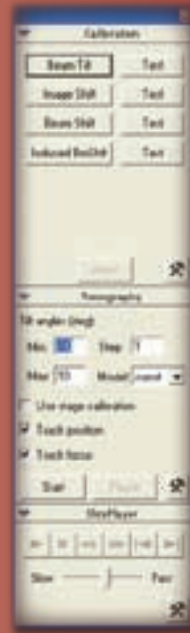
- View using Slice Player for 3D effect.
- View using standard DM 2D/3D tools.

### Report Generation

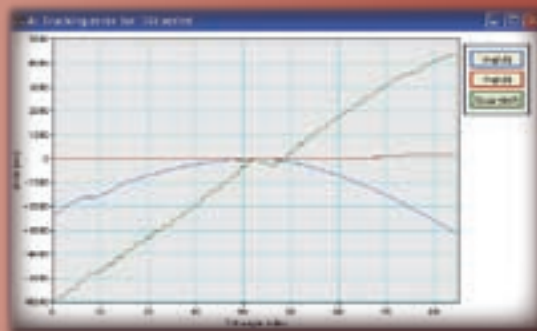
- Graphical output of tracking data measured during series acquisition.
- Graphical output of stage calibration used, or stage calibration for current holder.
- Log of corrections applied as series acquisition proceeds.
- Summary of experiment setup from tilt series.

### Import/Export of Data Series

- Export series as collection of images in standard DM3 format – enables import into IMOD and other reconstructions packages.
- Import a series of images into a tilt series.



Tomography dialog windows



Tracking report

## ORDERING INFORMATION

MODEL NO.	DESCRIPTION
730.00	Software for acquiring 3D tomography tilt-series with Gatan digital TEM cameras and Gatan Imaging Filters (GIF)
730.T	Installation and training (1 day)
912J	High tilt tomography holder for URP pole pieces
912P	High tilt tomography holder for UltraTwin® pole pieces
914	Single tilt nitrogen cooled cryo-transfer tomography holder
916	Single tilt room temperature tomography holder
927	Dual orientation room temperature tomography holder

**Notes:** Please consult Gatan for compatibility on TEMs that this software can be provided on.

PRECISION PERFORMANCE PRODUCTIVITY

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