1 ELL2 Quick Start Guide

The FS-8 ellipsometer, allows Ex-Situ characterization of thin films. It features 8 wavelengths in the spectral range of 370 − 950 nm. It has a motorized sample stage and a motorized Z-stage.
Caution: Do not push or force the motorized stages. All spatial adjustments are done through the software.

1. Switch power ON by pressing the white ON/OFF button near the right side of the unit.

2. Check that the detector is switched ON.

3. When ready, a flickering white beam of light should be emitted from the front aperture of the source unit.

4. Open FilmSense software by clicking the Microsoft Edge icon on the desktop or by clicking the FilmSense icon in the taskbar.

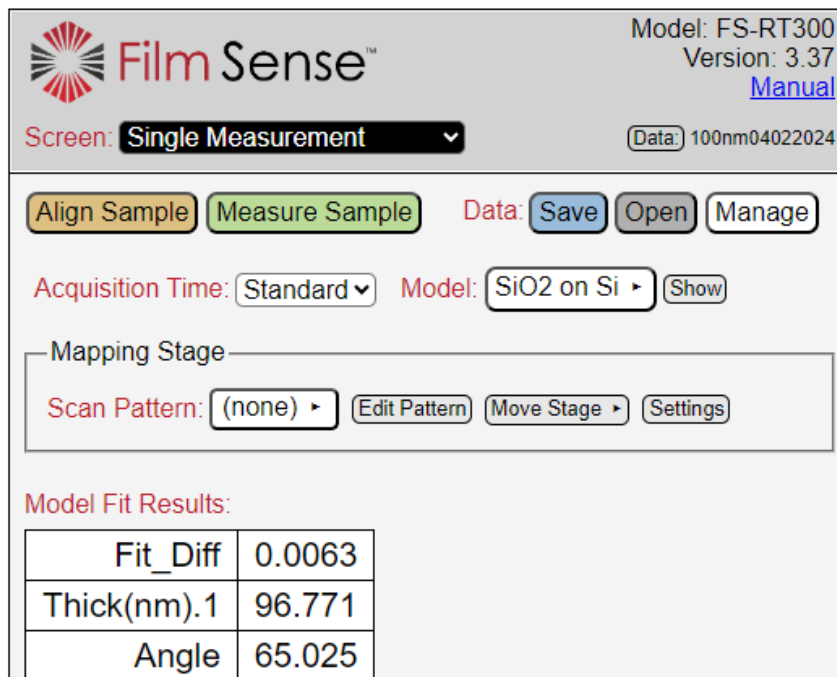5. The Film Sense software will be displayed (see fig.1).

Figure 1: Main window of FilmSense software

6. Mount your sample. If you need to move the stage, click the **Move Stage** button (see fig.2), select **Move Stage Screen**

Figure 2: Move Stage menu

7. In the stage mapping (see fig.3), move the stage by clicking the desired position in the grey box. Alternatively, move the stage using the keyboard arrows.
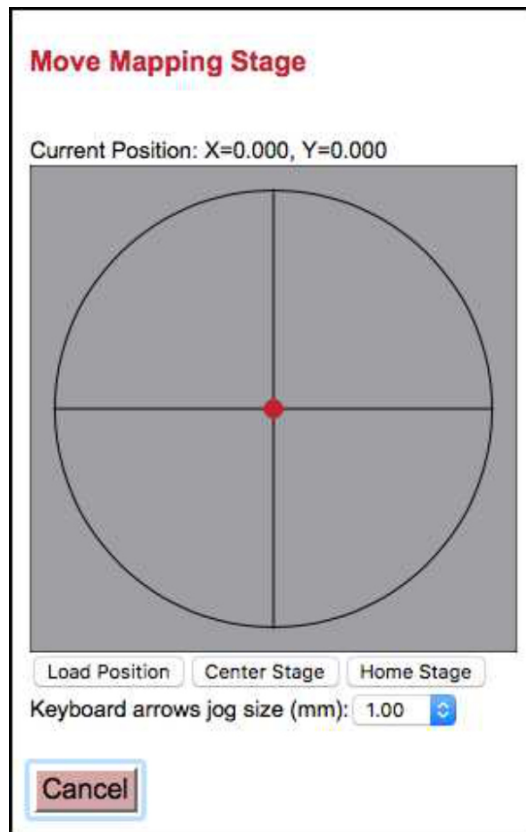

Figure 3: Moving the stage

8. To go back to the center of the stage, select **Stage Center** in the Move Stage menu (see fig.2)

9. Align the beam to the height of your sample. For that, adjust the Z-stage position from the FilmSense software. In the main window, go to tab

Screen: Single Measurement. Click on the **Align Sample** button. In the **Align** window (see fig.4), adjust the Z-stage using the up and down arrows in the keyboard. The values of **Intensity** and **AlignY** changes when the Z-stage is moved. Make sure that the **Intensity** value remains high enough to perform measurements (>0.05). When the height adjustment is complete, click the **Auto-Align** button. The auto-align procedure adjust the Z-stage height to have a zero value of **AlingY**.

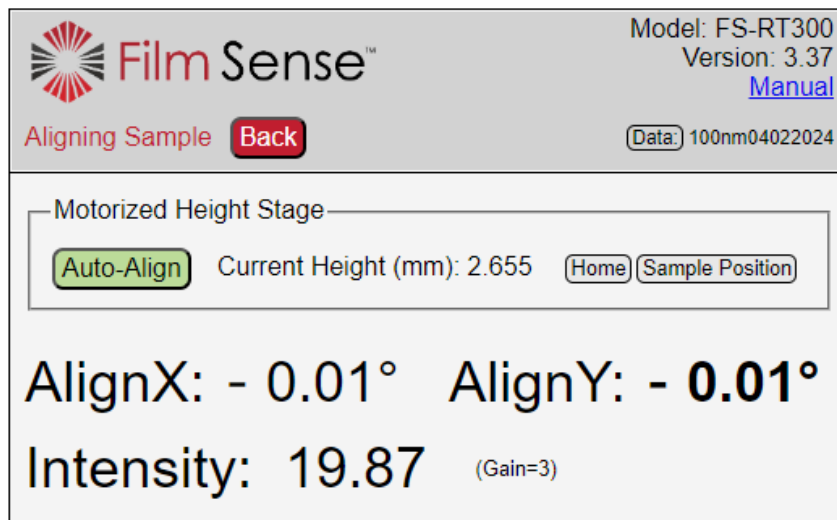10. When the alignment is done, click on the **Back** button

Figure 4: Align window. After Auto-Align, AlignY=0

11. Measuring samples. In **Screen: Single Measurement** select the **Model** to analyze the data (see fig.5). If model is set to **(none)**, the Ellipsometric Data at each measurement wavelengths will be displayed.
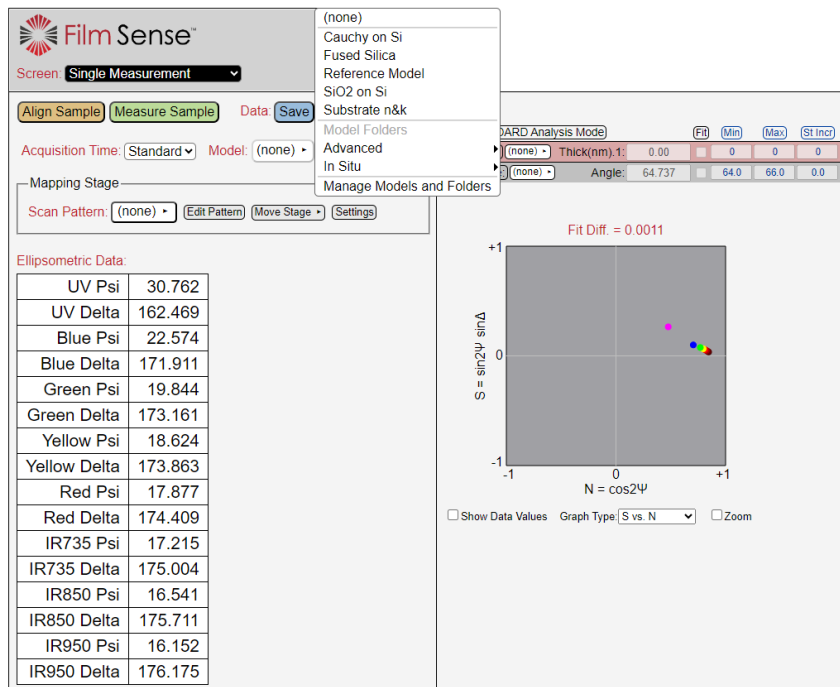
3

Figure 5: Select model

12. Set the **Acquisition Time** (standard is 1 (s)). Changes to the acquisition time can be made in **Screen: Settings** window (see fig.6).
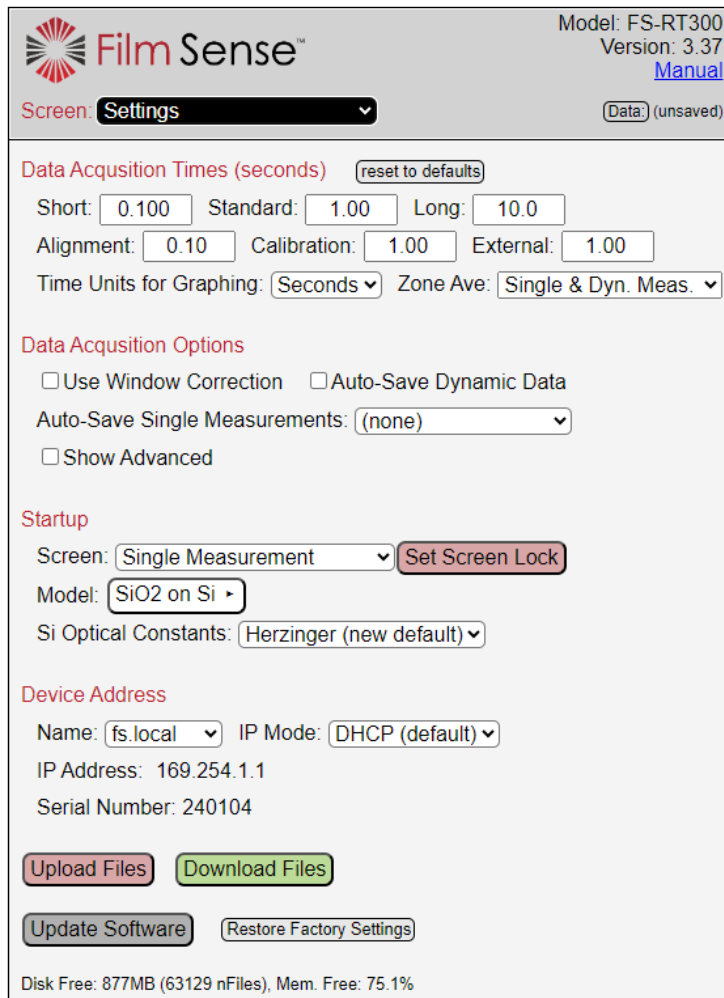
Figure 6: Settings Window

13. Set the **Scan Pattern**. If set to **(none)** the measurements will be performed without moving the stage. The scan pattern is edited by clicking the **Edit Pattern** button (see fig.7).
In the **Edit Scan Pattern** window, select the **Substrate Shape**, **Size**, **Edge of Exclusion** and **Pattern Type**. Save and select from the **Scan Pattern** menu.
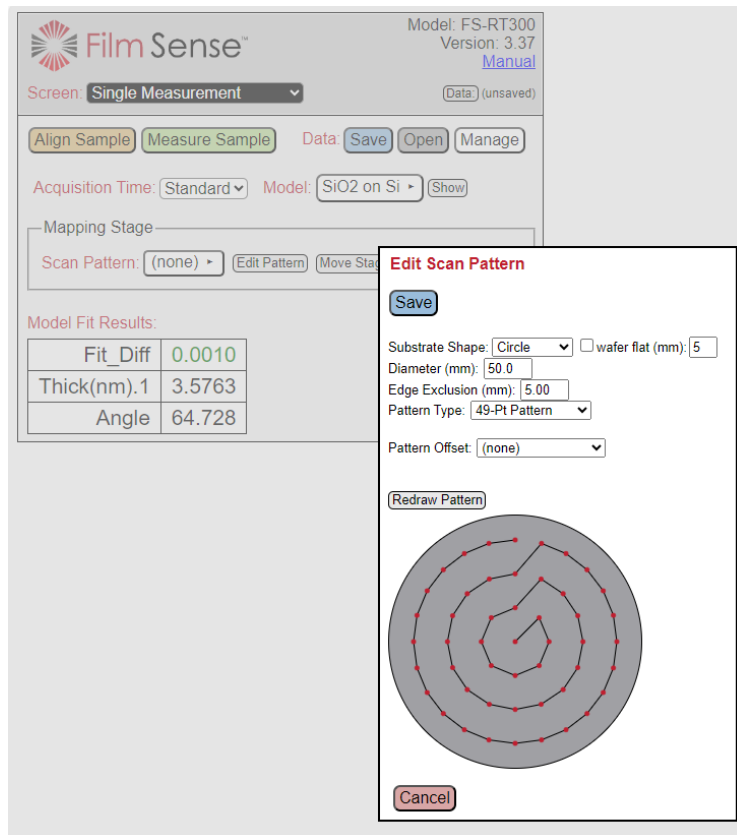
Figure 7: Edit Scan Pattern window

14. Save your data. To save data click on the **Save** button (see fig.1). Add the filename. In **Folder** select **Folder:DataUsers**. The data is saved to a memory card in the Ellipsometer and not in the PC.
To save the data on the PC (and retrieve it) click on the **Manage** button (see fig.1). A screen showing a list with available data will be shown. Select the data you want to export, and click **Download Files**.
A compressed folder with the data saved to txt files will be download to the **Downloads** folder in the PC.
Create a folder with your **Name** and **Last Name** in the folder **Documents/Ell2UsersData**.

15. At the end of your session, take your data with you using an USB or using the internet.

16. If nobody else is signed up in ELL2 (CoreResearch) on the same day, shut down the instrument with the **On/Off** button near the right side of the unit.