SARIN TECHNOLOGIES LTD.

Sarine Light

PC to System Coupling and Head-Stone Verification

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Safety First

Sarin Technologies Ltd. believes that the safety of personnel working with and around our systems is the most important consideration. Read all safety information below and in the System's Operations and Maintenance Manual before attempting to operate the system or perform any other procedures.

Warnings

1. Obey and follow all warnings and cautions given in this document.
2. Comply with all approved and established precautions for operating electrical and mechanical equipment.
3. All the procedures should be performed only by trained and authorized personnel.

Conventions

The following symbols have been inserted on the left hand side of the operating instructions in order to make it easier for the User to perform procedures:

Symbol	Description
	Note: Information given in a note describes how the part/unit/system functions or provides a tip on how best to use it.
	Caution: Information given in a message labeled "caution" refers to the safe operation of the system and provides warnings where the possibility for loss of data or damage to the equipment exists.
	Danger: Information given in a message labeled "danger" warns of possible hazard to personnel and extreme hazard to the system.

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1. General

The Sarine Light™ is an advanced high-precision system used to evaluate measure and grade the light performance of a diamond.

The Sarine Light™ evaluates how the light plays within the diamond and the amount of the light that is returned out of the diamond, back to you.

Once a diamond is placed in the Sarine Light™ machine, it automatically measures the diamonds 4 light parameters, Brilliance, Fire, Sparkle and Light Symmetry, which is then merged into a total grade.

1.1 Purpose

The following document provides detailed instructions for:

- Configuring the PC coupled with the Sarine Light system
- Head-stone verification procedure

1.2 Related Documents

System Operation and Maintenance Manual

1.3 Environment

Particles and dust free environment

1.4 Safety

Verify there are no obstacles near the rotating parts of the system.

2. Process Flow and Required Parts

2.1 Process Flow

The process of coupling the PC with the Sarine Light system includes the following procedures:

1. Creating encrypted files (see chapter 3)
2. Coupling the PC with the system (see chapter **Error! Reference source not found.**)
3. Sarin Ref-Stone verification process (see chapter 4)

2.2 Required Parts and Tools

The following parts are required for configuring the PC and for performing the head-stone verification process.

2.2.1 PC for Encrypted Files Creation

Tool Description	P/N	Notes
PC with Windows 7 or XP OS loaded with:		
• Production Tool application		Version 1.0.1.0

2.2.2 PC Hardware and Software

Tool Description	P/N	Notes
PC with Windows 7 OS loaded with:		32 bit with two mirror raid disks of 2 TB each
• Google Chrome		29.0.1547.76m
• Team Viewer		Version 8
Sarine Light Installation CD		

2.2.3 Verification Parts and Tools

Tool Description	Tool P/N	Notes
Calibration stones kit		3 different size stones
Tweezers	10034T	
Alcohol or IPA	0012-60	

3. Creating Encrypted Files

Configuring the Sarine Light coupled PC requires six unique encrypted files. The files are created for each system serial number, using a dedicated PC with the **Production Tool** application.

Note: To create the encrypted files the PC must be configured as follows:

- Open VPN with an account for production
- Out of the PROXY

Following are the operations for creating the encrypted files for a number of Sarine Light systems.

1. Browse to the folder **Dlight\ProductionTool_V1.0.1.0**, and create a text file with a list of all systems and their serial number named **machines.txt** (see Figure 3-1).

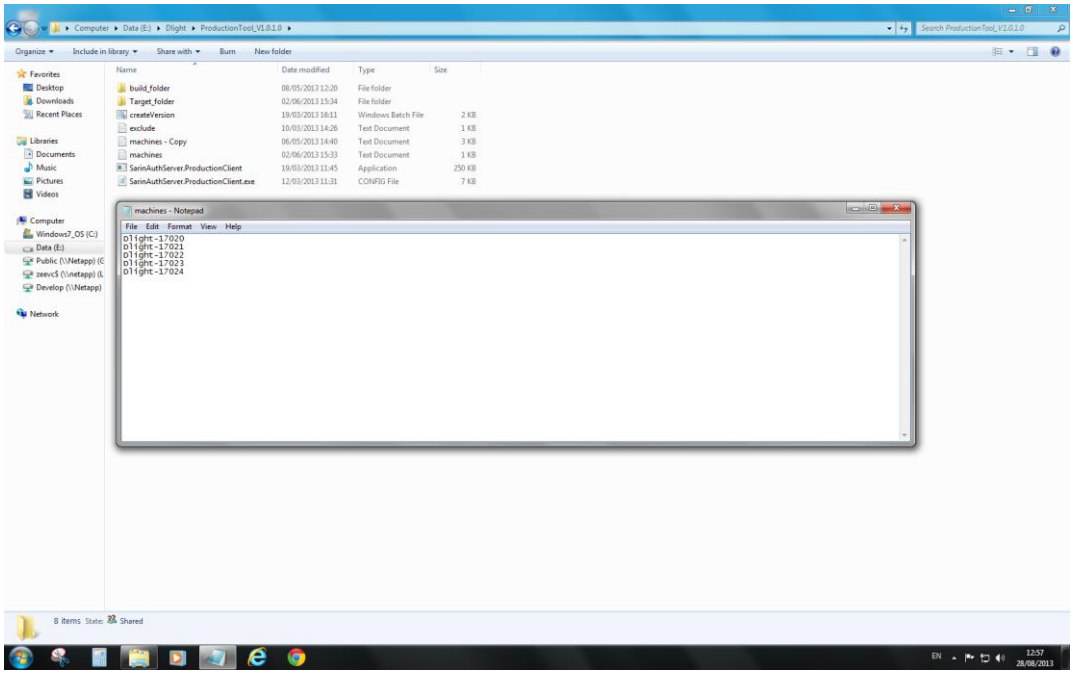

Figure 3-1. Machines text file (without GUID)

2. Create a new folder named **Target_folder**.
3. Double click the **createVersion** batch file. The following occurs:

A folder named **prev** is created in the **Target_folder**.

All files from the **current** folder are copied to the **prev** folder.

The **SarinAuthServer.ProductionClient** application is activated (see Figure 3-2).

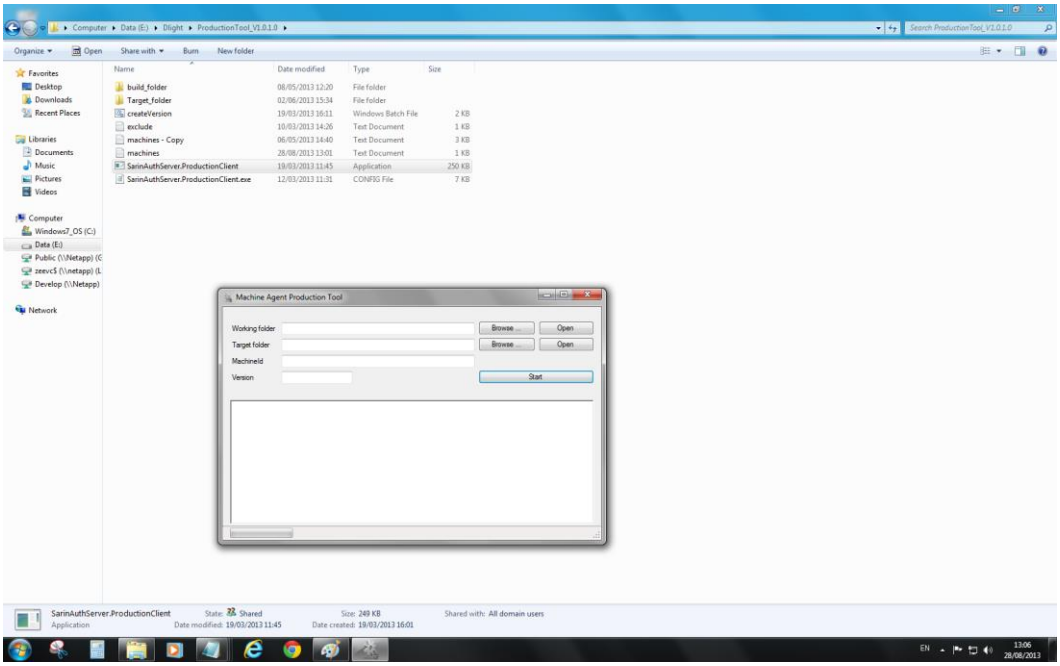

Figure 3-2. Production Tool GUI

The following text boxes are automatically filled (see Figure 3-3):

- **Working folder** with the path to the **build_folder**.
- **Target folder** with the path to the **current** folder.
- **Version** with the number of the current software version.

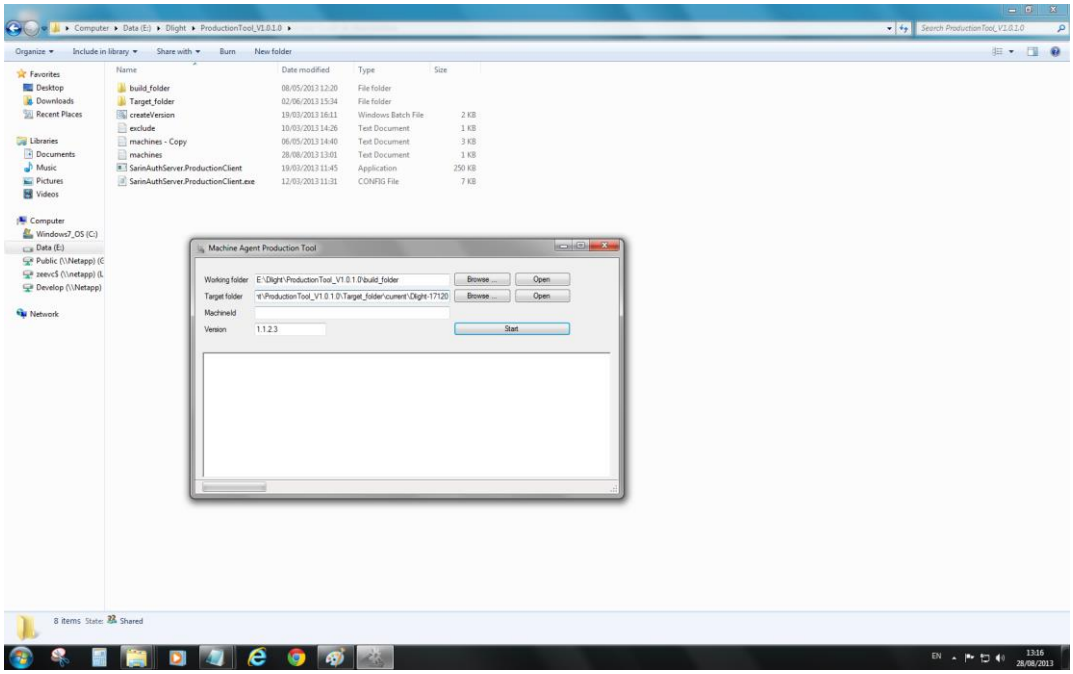

Figure 3-3. Production Tool (in progress)

Folders for each of the systems listed in the **machines.txt** file are created in the **current** folder (in the **Target_folder**), which includes the unique build for each of the specified Sarine Light systems.

4. At the end of the process copy the six created files into the folder created for each Sarine Light system, named with its serial number.

5. Backup the encrypted files to \\netapp\target\Machine Data Production\D-Light\Dlight 1.2\DlightEncryptionFiles

   Encrypted files to backup are:

configuration.xml

LP.Algo.BrillianceSymmetryCalculatorS.dll

LP.Algo.FireContrastCalculatorS.dll

Server_public.key

AnalyzerManagerS.dll

CalibrateManagerS.dll

4. Head-Stone Verification Process

The head-stone verification process is a process that calibrates the Sarine Light system with three Sarin reference stones, and includes the following two steps:

- Step 1: Measuring the stones
- Step 2: Verifying the stone measurements

4.1 Logging-in and Connecting

1. Double-click the **Sarin Agent** shortcut on the PC desktop (see Error! Reference source not found.).

   The following window opens.

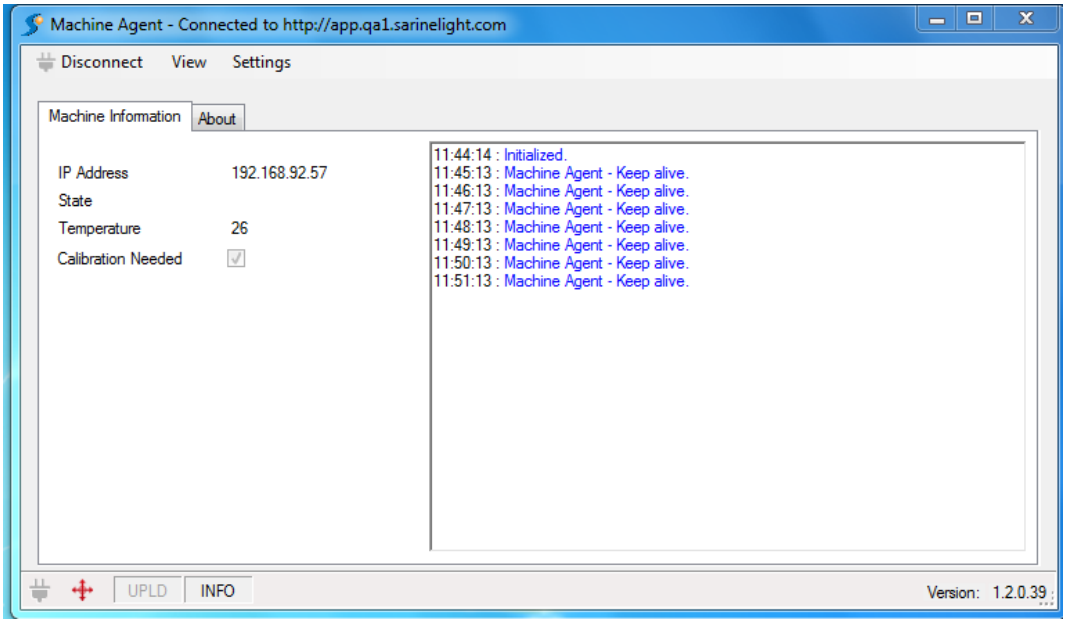

Figure 4-1. Machine Agent window

2. Verify the following (see Figure 4-1):
   - There is an **IP Address**
   - There is a number for the **Temperature**
   - **Connected** is written on the window upper banner.

   The above indicates the PC is connected to the system and there is a valid internet connection.

3. Double-click the **Sarin Light for Trade** (Chrome) shortcut on the PC desktop (see Error! Reference source not found.).

   The Login screen appears.

Figure 4-2. Login screen

4. Type-in the **Username** and **Password**.

   The Home page opens.

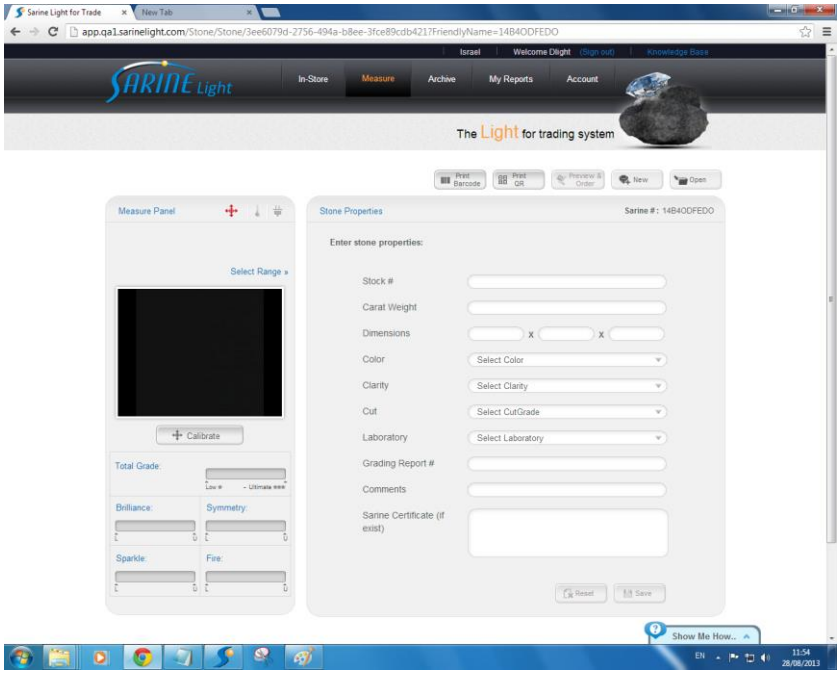

Figure 4-3. Home page

5. On the toolbar click **Account** and select the **Settings** option (see Figure 4-4).

   A list of the available machines is presented.

Note: The machines are identified according to their IP address or according to the Computer name.

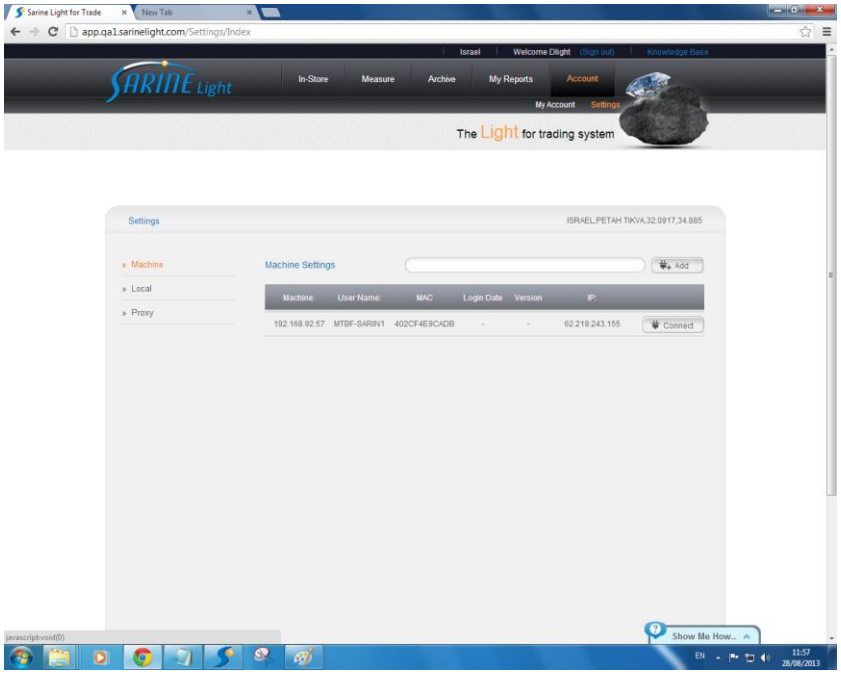

Figure 4-4. Connect to machine

6. Click **Connect**.

   The **Login Date** is updated (see Figure 4-5).

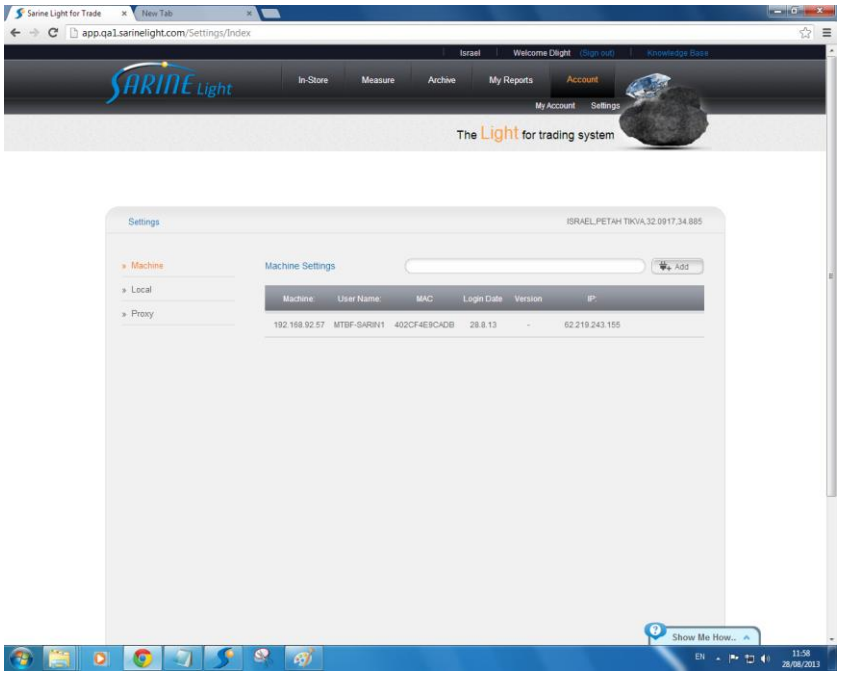

Figure 4-5. Connected screen

4.2 Adding a Verification Stone

1. On the toolbar click **Measure** and select the **Verify** option (see Figure 4-6).

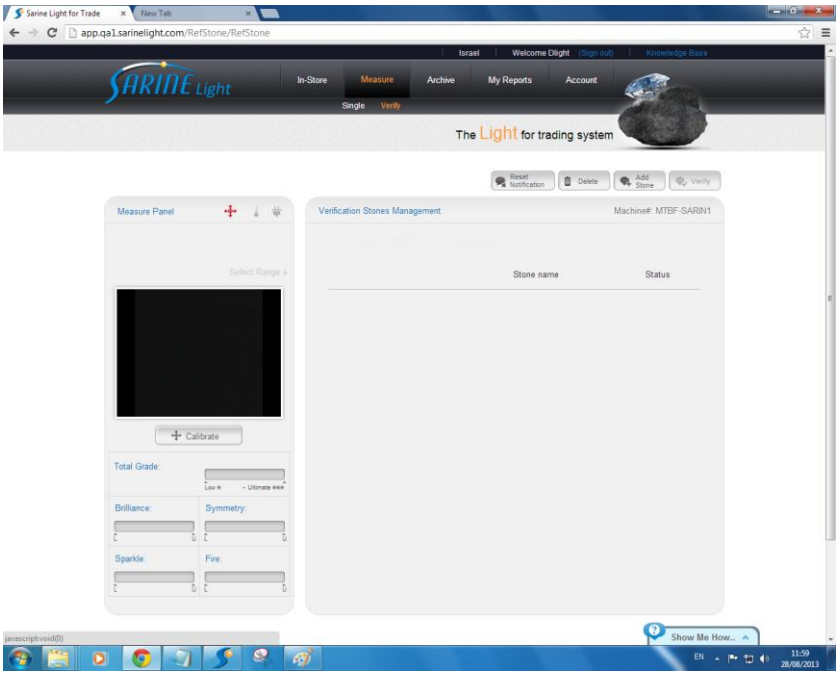

Figure 4-6. Add Stone tab

2. Click the **Add Stone** tab.

   The **Add new verification stone** window opens.

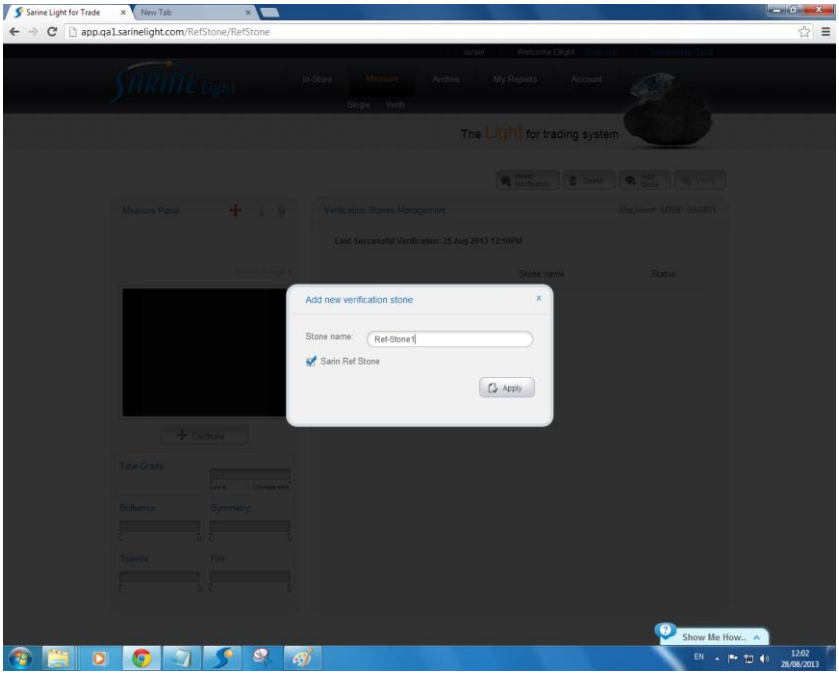

Figure 4-7. Add stone name window

3. Type-in **Stone name** and mark the **Sarin Ref Stone** checkbox.

4. Click **Apply**.

4.3 Calibrating and Measuring the Stone

1. Click **Start** on the **Calibration** task (see Figure 4-8).

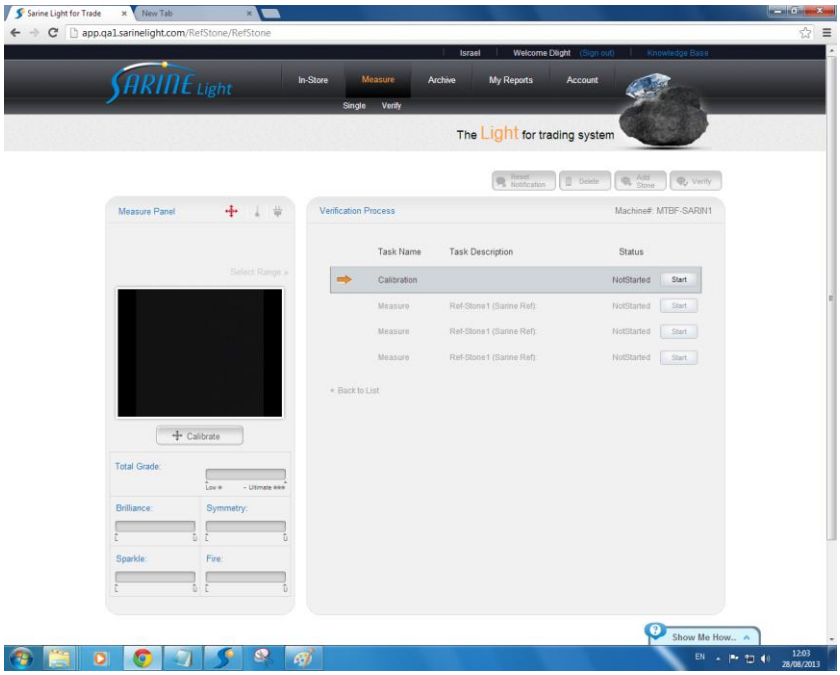

Figure 4-8. Stone Calibration

A message requesting to place the stone appears.

Figure 4-9. Place a stone message

Note: Clean the stone with IPA (or alcohol) before placing on the Iris.

2. Do the following:

Close the Machine's Iris all the way.

Place the stone to be measured at the center of the Iris

Open the Iris, letting the stone drop on the machine's sapphire lens.

Close the Iris around the stone, centering the stone on the lens.

Open the Iris all the way.

3. Click **Start** on the **Measure** task (see Figure 4-10).

Figure 4-10. Begin Measuring

The Calibration Status changes to Done (in green), and the stone measurement process begins (the progress bar advances). A live video of the stone measurement is presented on the screen left pane (see Figure 4-11).

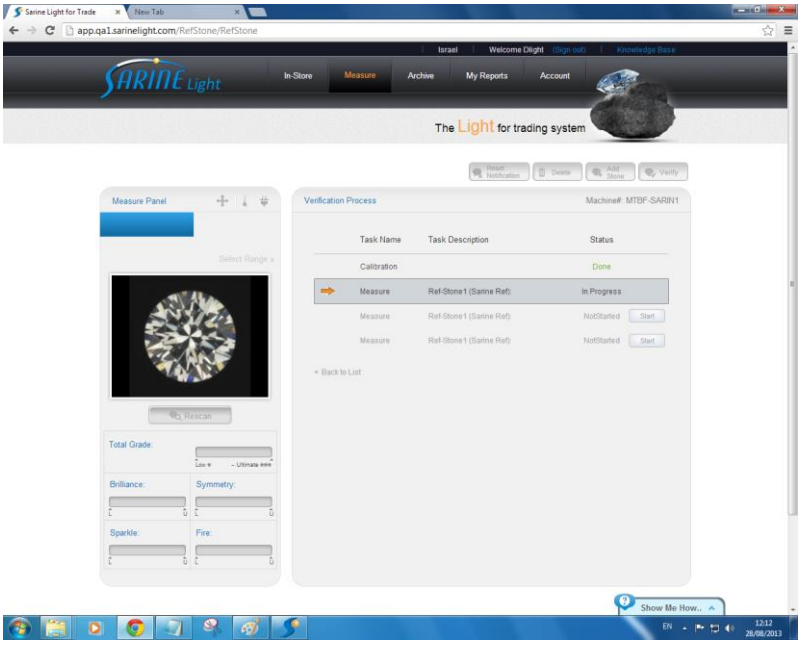

Figure 4-11. Measuring stone 1 (in progress)

When the stone measurement is complete a message requesting to rotate the stone and scan appears (see Figure 4-12)

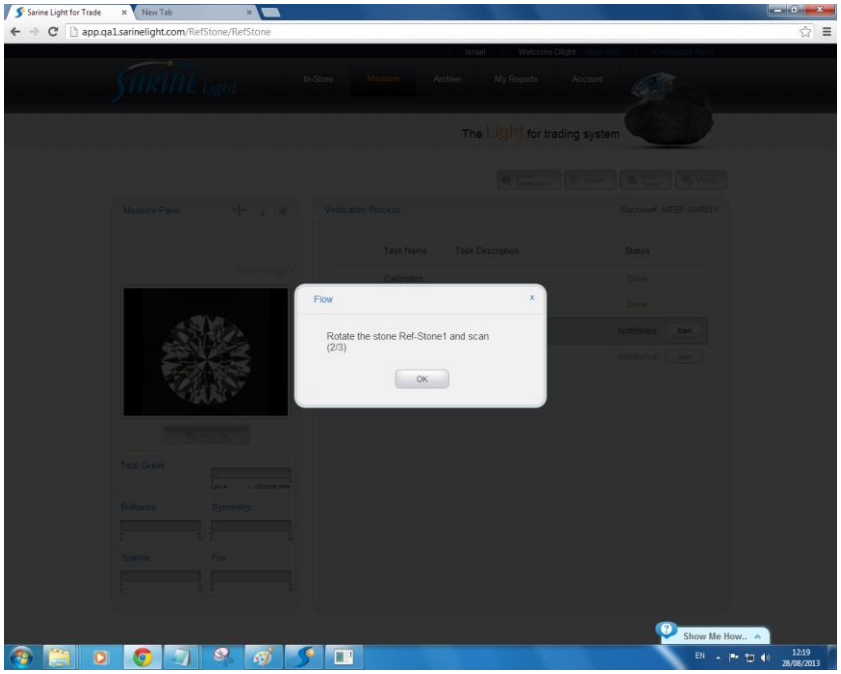

Figure 4-12. Rotate the stone message

4. Lift the stone with tweezers and do the following:

Close the Machine's Iris all the way.

Rotate the stone to a different angle and place it at the center of the Iris

Open the Iris, letting the stone drop on the machine's sapphire lens.

Close the Iris around the stone, centering the stone on the lens.

Open the Iris all the way.

5. Click **OK**.

A second measuring process is performed.

After the second measurement is complete a message requesting to again rotate the stone and scan appears (see Figure 4-13).

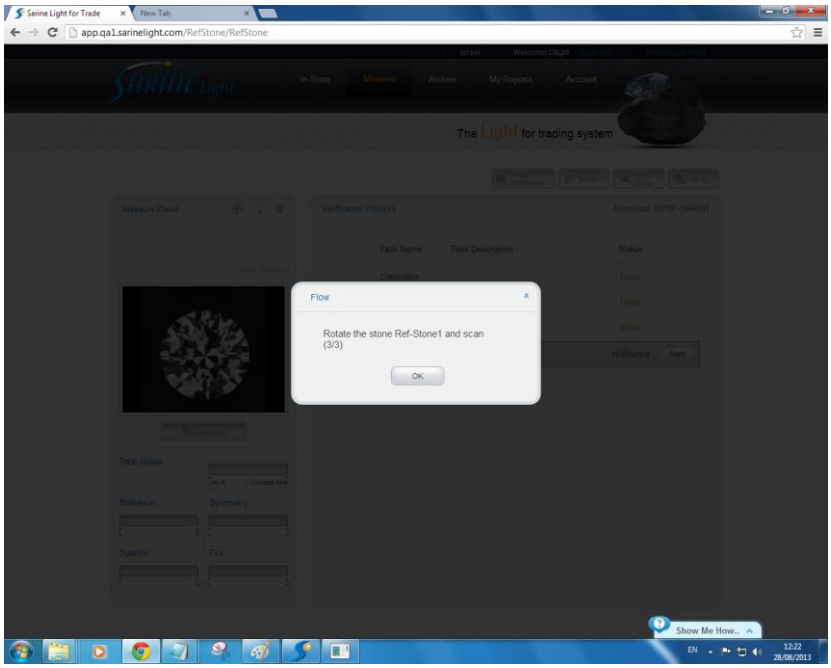

Figure 4-13. AddSotne-sarinRef3Popup

6. Lift the stone with tweezers and do the following:

Close the Machine's Iris all the way.

Rotate the stone to a different angle and place it at the center of the Iris

Open the Iris, letting the stone drop on the machine's sapphire lens.

Close the Iris around the stone, centering the stone on the lens.

Open the Iris all the way.

7. Click **OK**.

   A third measuring process is performed.

   After the third measurement is complete the following occurs (see Figure 4-14):

   - The Status changes to **OK** in green
   - A **Last Successful Verification date and time** notification line is presented.

Note: The date and time are those of the server (not of the connected PC).

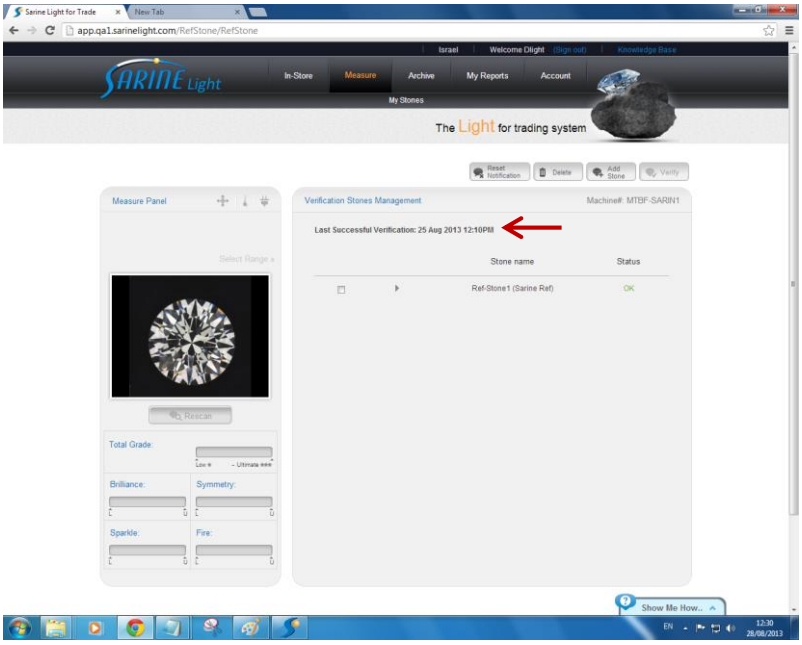

Figure 4-14. Last Successful Verification

8. Click the arrow sign ( ) to open a dropdown window with the stone measurement results (see Figure 4-15).

Figure 4-15. Stone measurement results

Note: Results written in red indicate the stone was not centered. Is such a case — repeat the measurement.

9. Check and ensure the stone **Avg** results match the stone size provided by the system engineer and are within the acceptable tolerance.
   If they are not — repeat the calibration and measuring process.

10. Click **Back to List**.

11. Repeat the calibration and measuring process with the other two Sarin reference stones.

4.4 Verifying the Stones Measurements

After calibrating and measuring the three reference stones, a verification process is performed to verify the machine is calibrated.

1. Mark the checkboxes of the three measured stones (see Figure 4-16).

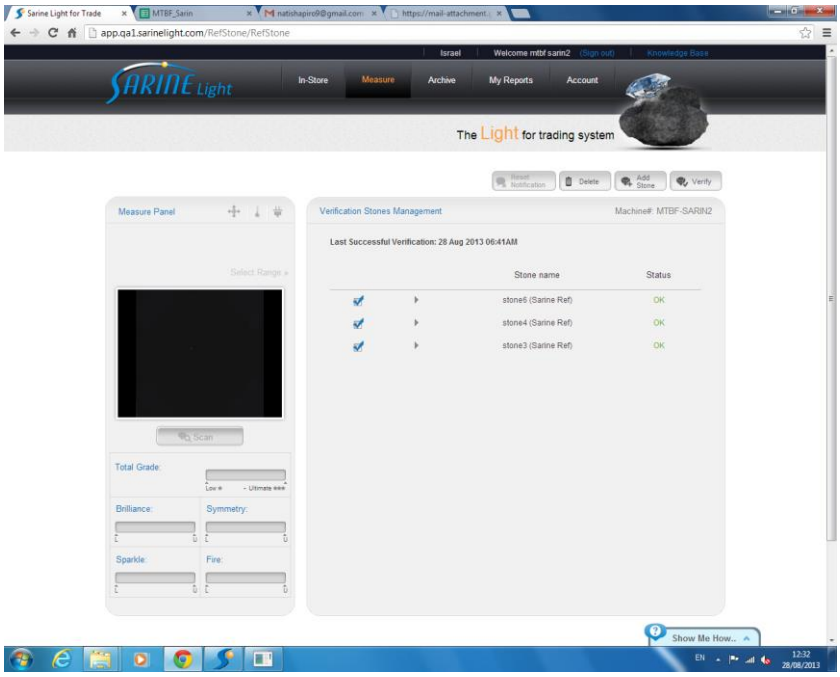

Figure 4-16. Marking the reference stones

2. On the toolbar click **Measure** and select the **Verify** option (see Figure 4-6).
3. Repeat the calibration and measuring process for each of the three reference stones.

Note: If at any time during the verification process a wrong size stone is placed, the full verification process should be repeated.

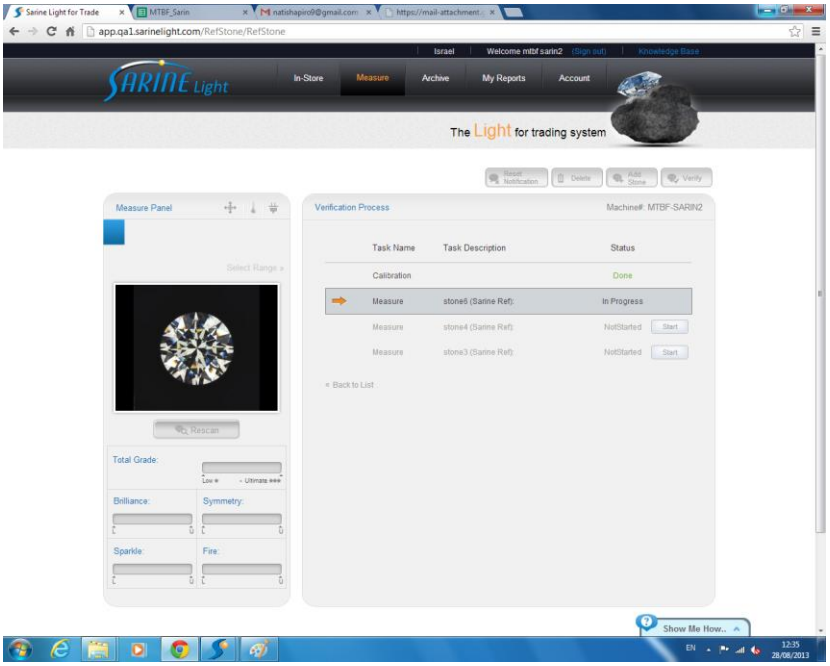

Figure 4-17. First stone verification (in progress)

4. After measuring each of the reference stones, click the arrow sign (▶) to open the dropdown window with the stone measurement results (see Figure 4-18).

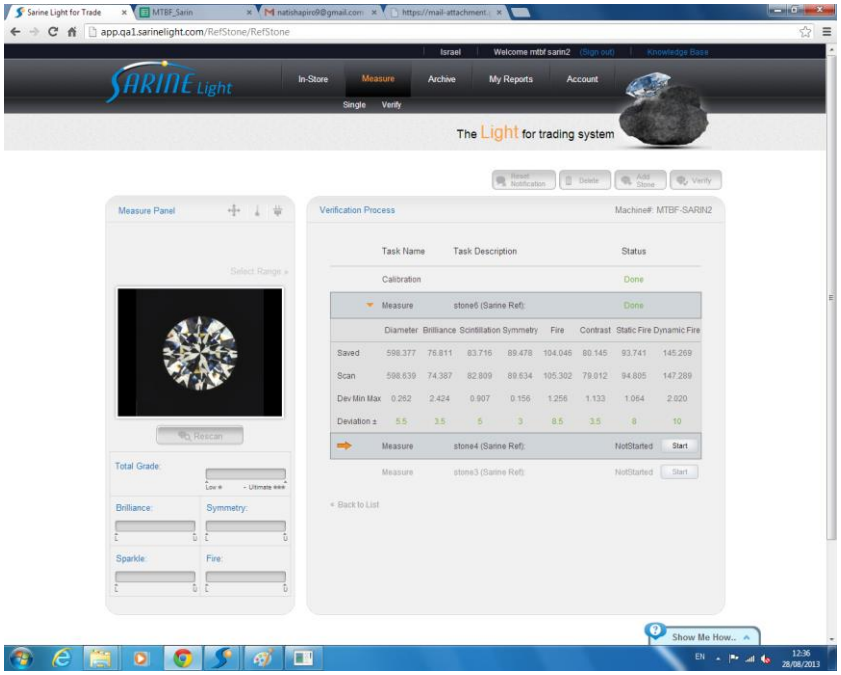

Figure 4-18. First stone verification results

Note: If the Deviation value is written in red, it is because the measurement exceeded the acceptable tolerance. Repeat the measurement.

5. Click **Back to List** after each stone to verify the next stone.

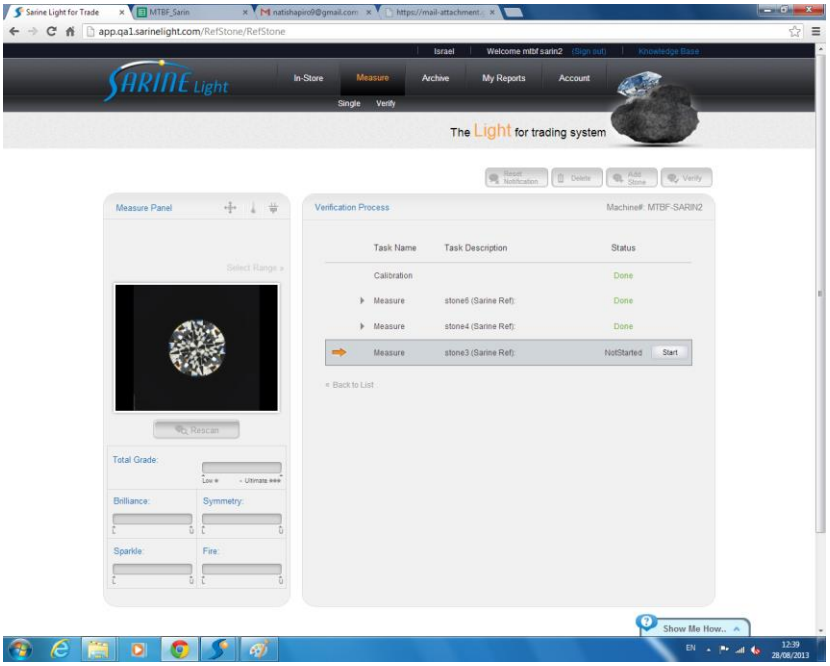

Figure 4-19. Third stone verification (start)

6. Click **Start** to perform the verification process.

   After verifying all three stones, the Status changes to Done (in green).

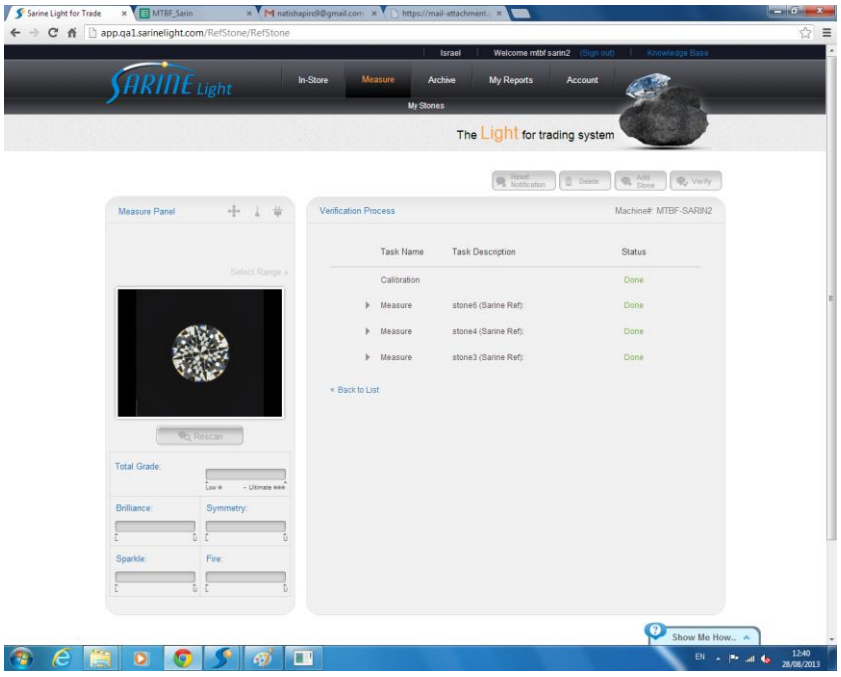

Figure 4-20. Verify stone done

7. Click **Back to List**.

   The **Last Successful Verification date and time** are updated (see Figure 4-21).

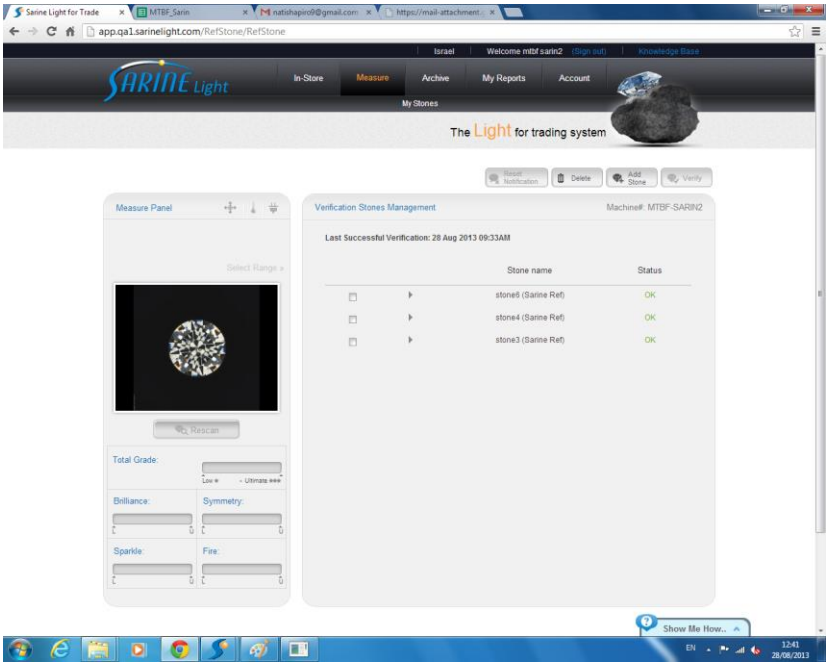

Figure 4-21. Stone verification done and successful

4.5 Verification Troubleshooting

In case there was a disconnection between the PC and the machine or internet, the following message appears (see Figure 4-22).

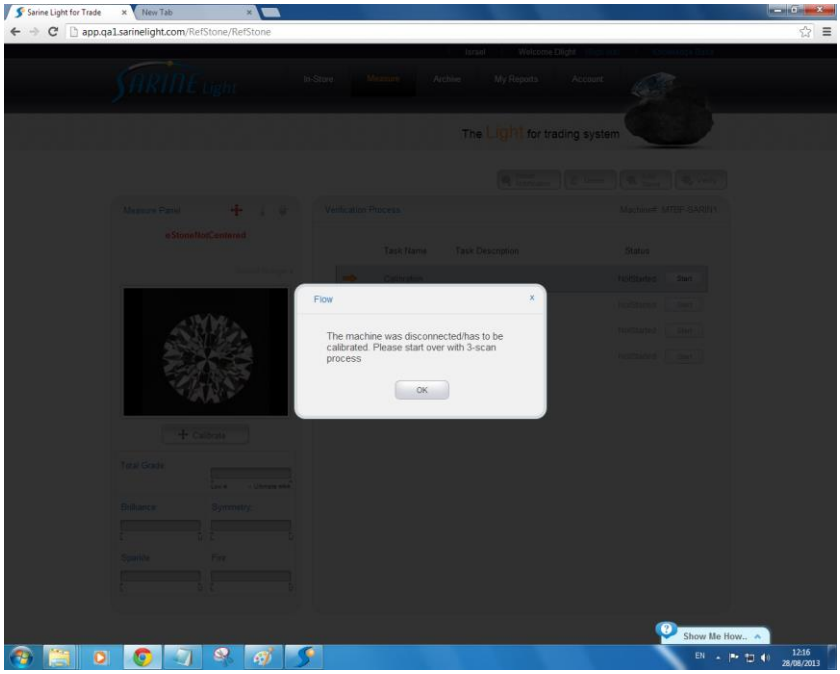

Figure 4-22. Disconnection

In such a case — start the measuring process from the beginning.

5. Appendices

Appendix 1. Reference Stone Sizes