



## Sarine Light <sup>TM</sup>

Light Performance Measurement, Sorting and Grading



## Installation Guide

P/N 36-0000-16  
PC  
Rev 3.x, August 2015

#### Limited Warranty and Disclaimer

Sarine warrants this product to be free from defects in materials and workmanship under normal use for one year from purchase. All implied warranties and conditions (Including any implied warranty of merchantability or fitness for a particular purpose) are disclaimed as to the product and this manual.

Your exclusive remedy for breach of warranty will be the repair or replacement of this product or a refund of the purchase price at our discretion. In no event will Sarine Technologies Ltd., its subsidiaries, affiliates or any of their directors, officers or employees be liable to you for any consequential, special, punitive or indirect damages (including damages for loss of business, profits, business interruption, and the like), whether foreseeable or unforeseeable, arising out of the use or inability to use the product covered by this manual, regardless of the basis of the claim and even if Sarine has been advised of the possibility of such damages. Sarine's liability (and that of its affiliates or any of their directors, officers or employees) to you for actual damages for any cause whatsoever, and regardless of the form of the action, will be limited to the money paid for the product that caused the damages.

The end user must follow the exact instructions and guidelines provided in this manual. Any deviation from such instructions and guidelines or use of any artificial means will release Sarine from any liability whatsoever.

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Sarine Technologies Ltd.

October 2015

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## Safety Instructions and Electrical Waste Instructions

### Important Safety Information

### **Waste Electrical and Electronic Equipment (WEEE)**

#### *Disposal of Electrical and Electronic Waste*



The symbol  is now displayed on Sarine products to show our compliance with directive WEEE. The WEEE Directive is about recycling parts and states that no electrical or electronic equipment can be discarded into the city's normal waste disposal system.

#### ***Obligatory Acceptance of Discarded Electrical and Electronic Equipment***

The end user of this product now has the right to request the product supplier to dispose of the product. Therefore, if you require help in discarding this product please contact your local agent or Sarine directly.

#### **Technical Assistance**

For technical questions and troubleshooting assistance: Contact the Sarine office closest to you.

Sarine Israel support

Tel: +972-9-7903500

E-mail: [support.product@sarin.com](mailto:support.product@sarin.com)

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#### *Document Version History*

Version	Issue Date	Author	Remarks
1	September 2013	Yuval Bachar	1 <sup>st</sup> Draft
2	30 May 2015	Yuval Bachar	2 <sup>nd</sup> Draft, Overall overview
3	July 30, 2015	Yuval Bachar	3rd Draft
4	17, September 2015	Yuval Bachar	Added filter replacement routine

## Components

The following components are part of the Sarine Light™ scanner:

Table 1: Components

Components	Description
<p>Sarine Light™ scanner</p> 	The machine used to scan stones
<p>Power adapter</p> 	An adaptor enabling power supply compatibility
<p>Iris for small stones</p> 	An additional Iris for stones size 5 to 20 points. This iris is marked using “NANO” text
<p>Quick installation guide</p> 	A concise description how to quickly set-up and use the Sarine Light™ scanner
<p>Tweezers</p> 	A tool used for placing stones
<p>Cleaning cloth</p> 	Used for cleaning stones
<p>Sarine Light™ PC</p> 	Lenovo PC for connecting to the Sarine Light™ scanner (including cables)
<p>Software protection HASP plug</p> 	USB dongle for software protection and licensing

Reference Stones		A pack of 3 reference CZ's required for the stone verification process
Air Filter		A spare filter, replace once a year or after the filter gets worn out
WiFi Dongle (Optional)		A component enabling Wi-Fi connectivity

## Hardware

Sarine Light™ scanner is composed of the following components:

- Top Panel
- Front Panel
- Rear Panel

## Top Panel

The top panel of the scanner includes the work area and the diamond scanning area.

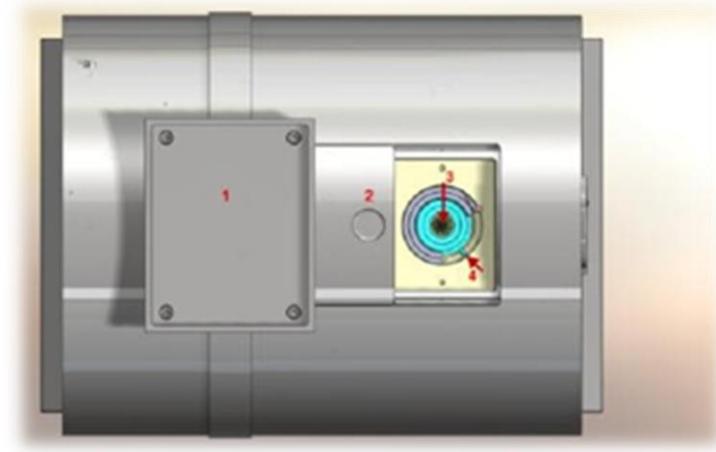


Table 2: Top Panel Components

Components	Description/Use
1. Work area	Ideal for placing stones while working
2. Cover	Protects the scanner. Must be closed when scanning or calibrating or when not in use
3. Stage Window glass	Place the stone on the stage window glass (using tweezers) in order to scan
4. Shutter (Iris)	The stone is centered on the stage window by closing the shutter

### Front Panel

The front panel includes a light indicator that flashes when the machine is powered up and while the scanner is being calibrated.

### Rear Panel

The rear panel includes the power button and the communication connections.

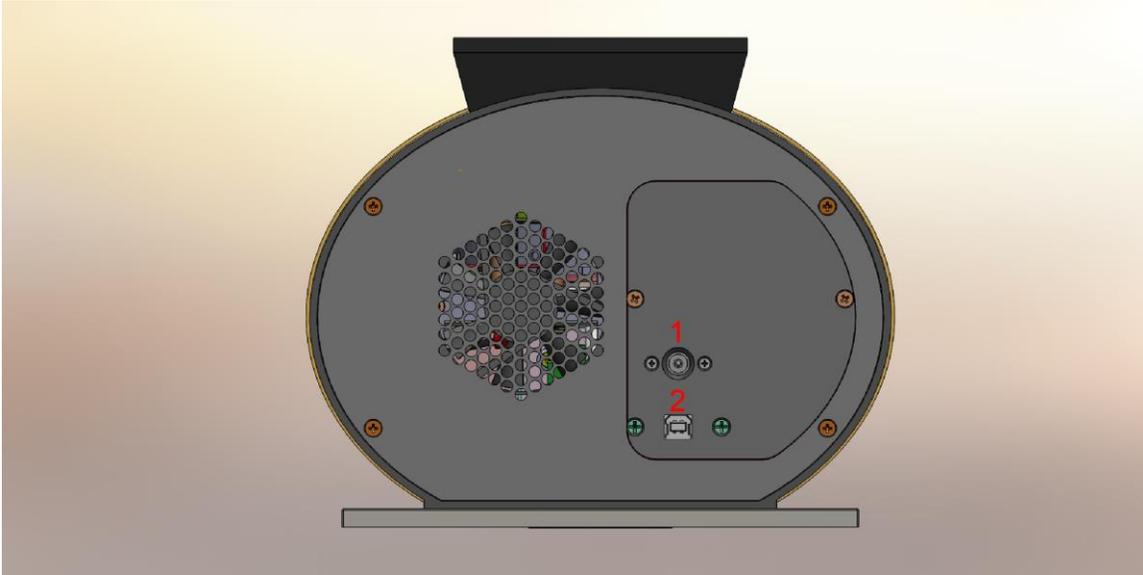


Table 3: Rear Panel Components

Components	Description/Use
1. USB Port	Connect between the Light™ system and the computer.
2. Power socket	Socket to connect a power cable

## Initial Setup

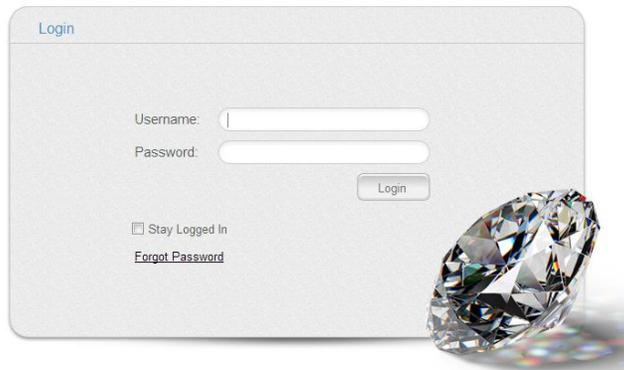
**Note:** The connections are found in the rear panel of the scanner, see [Rear Panel](#).

1. Connect the Light™ scanner to a 110/220 Volt power outlet, using the supplied power adapter and power cord.
2. The Sarine Light™ scanner connects to the computer using a universal serial bus (USB) cable.
  - a. Connect one end of the USB to the scanner rear panel. Connect the second end of the USB cable to port #5 at the back side of the supplied PC (near to the Ethernet port).
3. Connect the software protection HASP plug to one of the free USB ports on the back side of the PC
4. Turn ON the PC



## Account Login

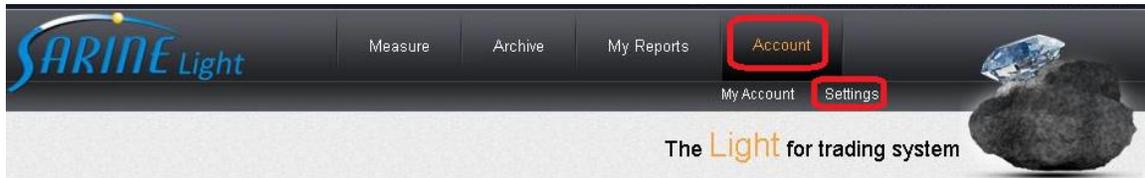
1. Using the supplied PC, double click the Sarine Light trade shortcut on your desktop Or open Google Chrome and browse to Sarine Light™ application website: <http://app.sarinelight.com/>
2. Log-in using the account details provided to you by Sarine.



Upon initial login, you will be prompted with the legal agreements, and will be requested to accept them.

## Connect to machine

1. From the toolbar on the top of the screen chose: *Account ->Settings*



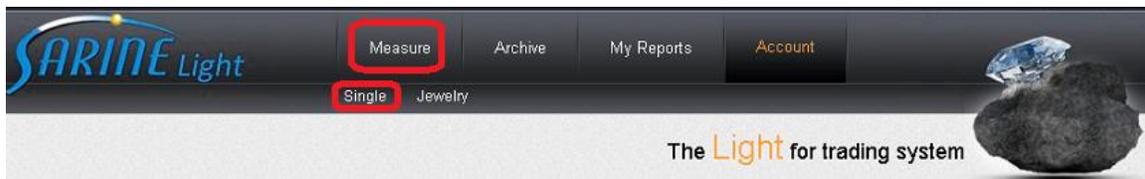
2. Locate your machine and click on the **connect** button next to it.

For example, if your machine's S/N is 17040:

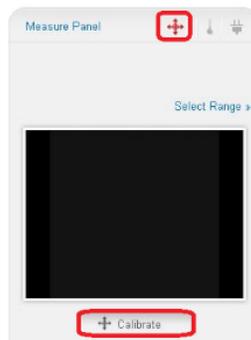
Machine:	User Name:	MAC	Login Date	Version	IP:	
192.168.250.44	ARIK-LAP	00FFDB9986B5	-	-	172.30.4.127	 Connect
192.168.91.13	CHANA	386077E022D1	-	-	172.30.4.127	 Connect
192.168.91.18	dlight-17040	00031D0B1001	-	-	172.30.4.127	 Connect

## Calibration

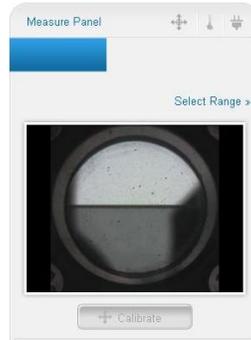
1. From the toolbar on the top of the screen choose: *Measure ->Single*



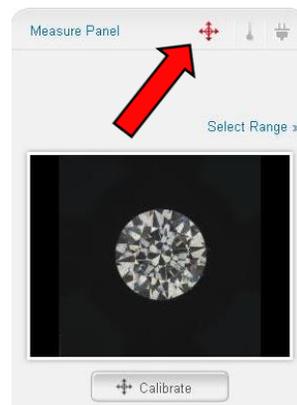
2. Calibration is required in order to insure light performance grading results are kept accurate. **Please make sure there is no stone above the glass stage and that the cover of the machine is closed during this procedure.**
3. Calibration is done by clicking the calibration button, when calibration is needed:



4. At this time calibration process will commence:



5. Once calibration is complete, it will be possible to measure a stone. At any time during your work with the Sarine Light™ scanner, calibration may be required, in this case, remove the stone from the glass stage and recalibrate your machine.



## Measure

**PLEASE READ THIS BEFORE MEASURING** - [Stage window cleaning](#)

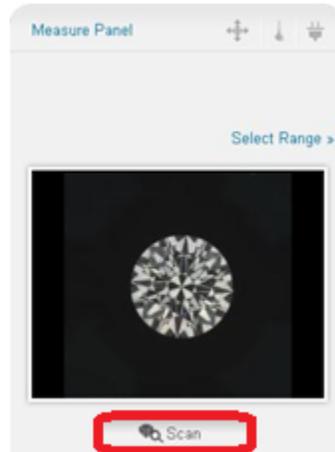
**If you wish to measure stones between 5 to 20 points, please [replace the Iris with the additional Iris supplied labeled "NANO"](#).**

1. Place the stone inside the light machine:
  - a. Open machine lid
  - b. Close the Iris to a size smaller than the stone's diameter
  - c. Place the stone on top of the iris (table-side down)
  - d. Open the Iris slowly until the stone is placed on the glass
  - e. Gently close the Iris and center the stone
  - f. Open the Iris wide
  - g. Close the machine lid

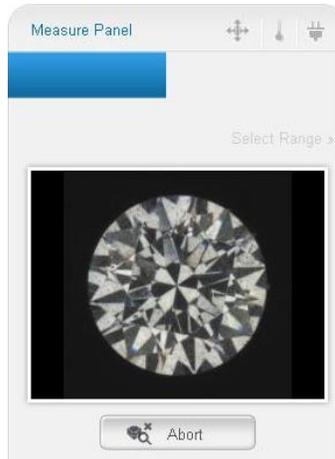


**Note: For additional details, please watch the movie <http://youtu.be/92iJF67ZgPo> or scan the QR.**

2. Click the **Scan** button:



Scanning process will commence; the blue bar indicates its progress.



3. Once scanning is complete, stone properties window will appear:
- Select the relevant Shape
  - Fill-in (or scan) the stock # (has to be unique).
  - Weight is required for ordering reports.

The light performance grading results will appear at the bottom.

4. Click on the **save** button to save the stone.

**Stone Properties**

---

Shape:\*

Stock #.\*

Weight:

---

**Measured Values**

Total Grade: VeryHigh \*\*\*

Brilliance: Standard      Fire: Ultimate

Sparkle: Ultimate      Light Symmetry: Ultimate

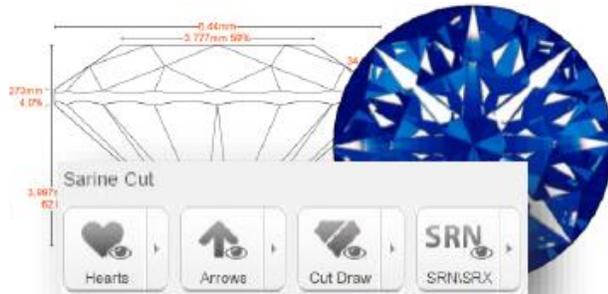
---

5. Fill-in relevant stone properties: Carat Weight, Color, Clarity, Cut, Report #, etc.  
**Notes: Stone properties can be entered during measurement or after it is complete.**
6. After editing the stone properties, click **Save** in order to save your changes.
7. To scan a new stone click on **New**.
8. If you wish to rescan the stone, click on **Rescan**

## Sarine Profile

Connectivity with Sarine Profile is preserved through Sarine Friendly name (Sarine #) which appears on the top right side of the stone properties window.

This is a unique combination of numbers and letters. It links the stone throughout the different platforms: Sarine Cut, Sarine Loupe and Sarine Light. And present the diamond story to consumers in a user-friendly customizable format to make the purchase process smooth and successful.



You can now upload external resources such as a diamond certificate or the stones H&A light signature and the 2D cut image.

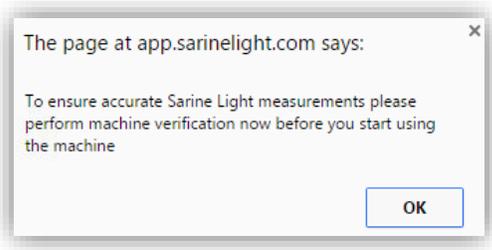


A Demo profile: <https://api.sarine.com/viewer/v1/1ORO1P4OGA/DP54G609F3>

## Verification Process

Every 24hours (or after 150 stones) you will be required to scan and verify 3 reference CZ's that were supplied with the machine.

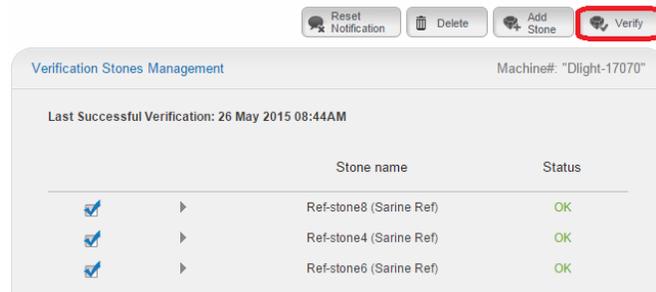
This process tests the accuracy of the machine, and is essential for its' proper functionality.



If above conditions are met (24hrs before last verification/150 stones were measured) you will be automatically transferred to the stone verification page.

It is also possible to access it directly from the toolbar: *Measure* -> *Verify*

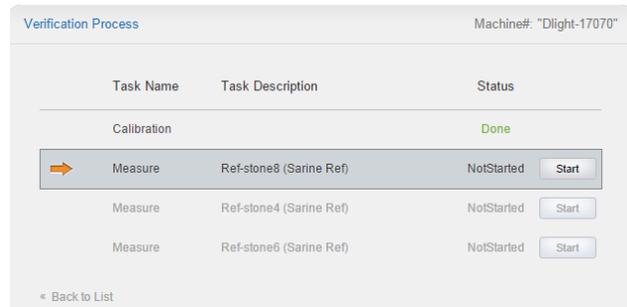
On verification page check all 3 ref stones checkboxes and click on **Verify**.



The initial step is machine calibration; check that the measuring chamber is empty, the iris is open and click on **Start**.

Then scan the ref stones one by one in the order that they appear, hit the start button for measuring process to begin.

When process is complete you may begin with the stone measurement activity.



**Notes: If one of the stones fails, you will have to start the process from its beginning.**

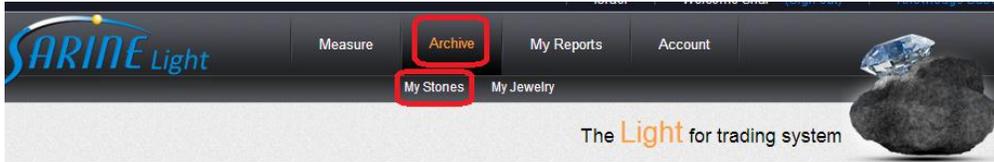
For instructions on how to properly clean the reference stones, please watch the movie <https://youtu.be/xYWwPfSandc> or scan the QR.



## Reports

### Order Reports

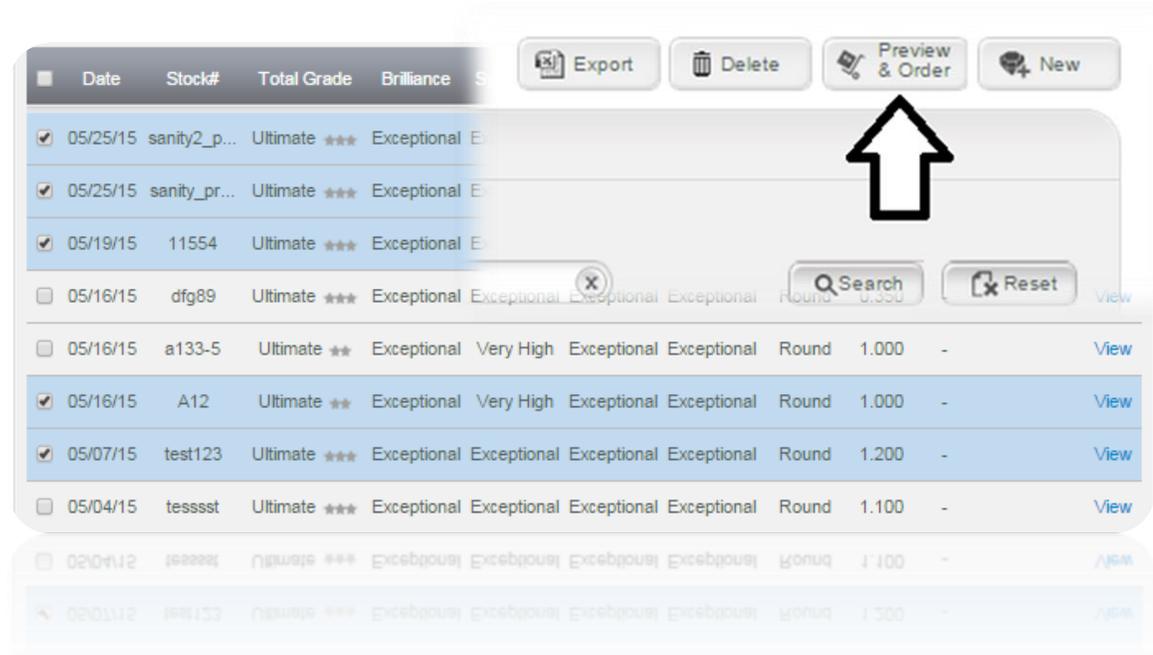
Once saved, the stone will be available under *My Stones* screen and applicable for a Sarine certificate.



If you wish to order a report for a single stone click on **Preview & Order** from within the stone properties window.



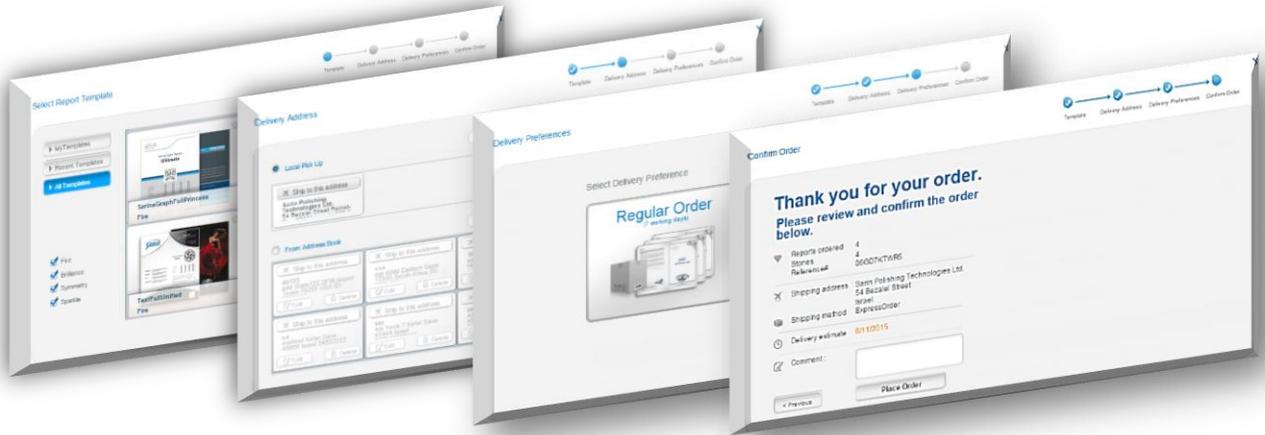
To order multiple reports as a batch, go to *My Stones* screen and check each of the stones you would like to order and then select **Preview & Order**.



Then follow the instructions appearing on screen:

- Select a report from a wide variety of available templates
- Specify your shipping address
- Select your delivery preference

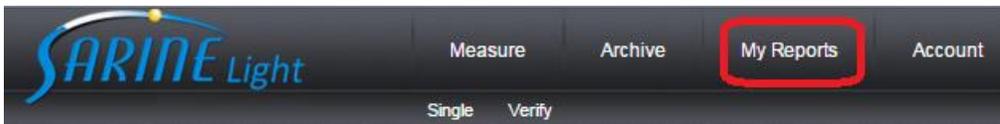
- Confirm order details and add a comment or any other reference (such as: Store ID) which will ease the process of reports distribution (E.g.: distribution from the headquarters to the stores or distribution from the print shop to the customer).



### Follow your orders

Our live tracking system lets you see exactly where your order is located on the pipeline.

Just go to 'My Reports' where you'll see the orders you made.



My Reports

Report Type

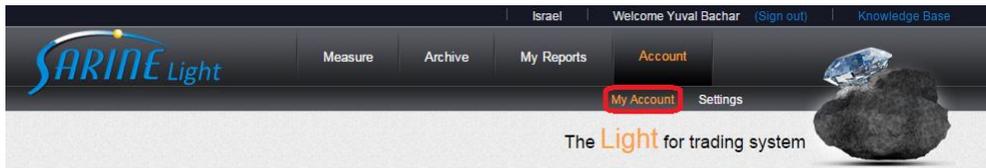
Search by: sarine #, stock #, catalog #, sarine report #, order #

Status:  Priority:  Date:    Day  Week  Month  Year

Stone#	Sarine#	Stock#	Report Type	Order Date	Status	Priority	Orderid	Error	Action
24R1GNSVP	4P4WHKME1	sariny_prod	SarineGraphFull	06/07/2015	QC Passed	1	0XRW49IQ9D		<input type="button" value="Cancel"/>
30WM9B9WR	4KIKYH10FP	demo130115	CGLMemoBarcode	02/05/2015	Generated	1	0BPYEN70QI		<input type="button" value="Cancel"/>
2RALTQDANQ	6LXMGQMF81	sha002	MemoOnly	09/02/2014	QC Passed	2	0BXUSM300L		<input type="button" value="Cancel"/>
1520AESD1	4C7ESS1WDZ	DemoReportU3	SarineGraphFull	08/11/2014	QC Passed	2	00089T1Y3O		<input type="button" value="Cancel"/>
1520AESD1	65BSNVJGY	DemoReportU3	SarineGraphFull	08/07/2014	QC Passed	1	053AMM6A7N		<input type="button" value="Cancel"/>

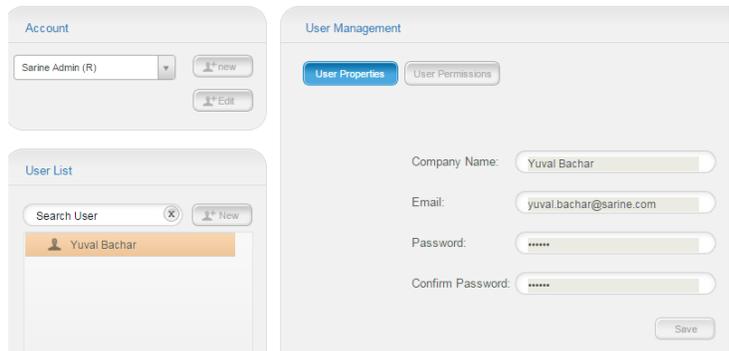
## Account Settings

To access and change your account settings go to *Account* -> *My Account*



## Change password

1. Select the relevant user from the Users List.
2. Type the new password and confirm it.
3. Click on **Save**.



## Maintenance

This section includes several common maintenance actions to be followed:

- Fan Filter Replacement
- Light™ Stage Window Cleaning

### Fan Filter Replacement

#### Introduction

The Light™ scanner has a fan cooling system to maintain a low working temperature. The fan cooling system includes a filter to prevent dust and other dirt from entering the machine, effecting optical elements, electronic devices and performance. If the filter is dirty, air flow is constricted, causing a rise in machine temperature that may damage hardware components. To prevent damage and ensure system performance, replace or clean the filter every few months.

#### Cleaning / Replacing a Filter

##### General

The machine automatically detects that the machine is overheating, and sends an alert to replace or clean the filter. If the filter is not replaced, and the temperature rises, the machine disables the application, and at very high temperatures shuts down the computer. Even after replacing the filter, the machine will stop sending overheating notifications only after it cools, the cooling time depending on the temperature that the machine reached, and environmental conditions.

##### Routine:

Clean the filter every few days. In extreme conditions, clean the filter more frequency.

**Replace the filter at least once a year or after the filter has worn out.**

#### Filter Cleaning / Replacement Procedure

The filter is located in the base plate at the front of the machine.

##### To clean / replace the filter:

1. Raise the front cover of the machine, or turn the machine upside down (before turning the machine upside down, turn it and disconnect it from the power supply).

The filter cover is revealed.



2. Push the filter cover down in order to open it (the filter is closed with pressure applied on it by the filter cover).



3. Remove the filter
4. Install a new filter or clean and reinstall the existing filter:

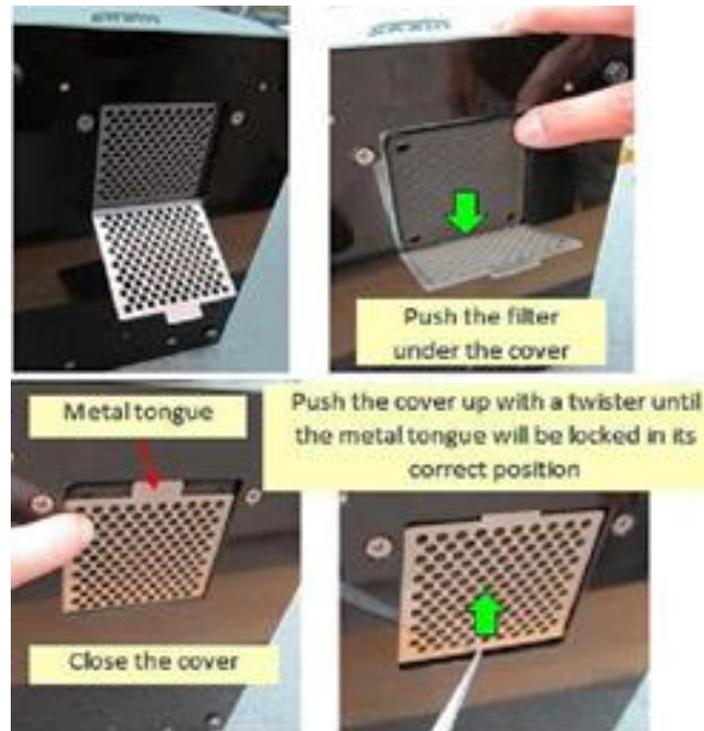
**Requirements:**

- Clean the filter under flowing water
- Ensure that the filter is dry before re-installing it

**To install a filter:**

- a. Place the filter between the metal net and the filter cover.
- b. Close the filter cover a little and push the filter under the filter cover.
- c. Close the cover and push it on the filter.
- d. With a twist, push the cover until the metal tongue will enter its position.

The following pictures display filter replacement:



5. Reconnect the machine (if unplugged).

**Note: Ensure that the machine has cooled down before resuming activity (Monitor the machine temperature displayed in the temperature notification panel).**

## Light™ Stage Window Cleaning

### Introduction

The Light™ stage window is part of the measuring system. As a dirty or stained stage window could impact the measurement of the stone, it is important to keep it dirt or dust free.

**Note: Particles of dust or fingers skin fat secretions can cause the accumulation of dirt on the Light™ stage window.**

### Light™ Stage Window Cleaning Method

#### Materials

The following materials are necessary in order to clean the Light™ stage window:

- To remove dry dirt or dust:
  - Lens cleaning paper or soft toilet paper
- To remove fat: Alcohol - at least 70%, purchased at any pharmacy (95% is recommended)

**Note: Wipe the dust off gently in order to avoid scratching the Light™ stage window.**

## Stage Window Cleaning Procedure

To clean the stage window:

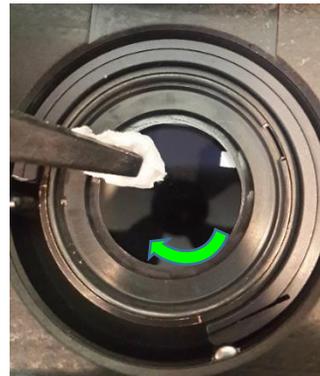
1. Fold one sheet of lens cleaning paper
2. Hold the lens cleaning paper with your tweezers

**Note: The tweezers, which have plastic edges, are provided by Sarine together with the machine.**



3. For dry cleaning (that is, dust \ dirt and so on):  
Open the centering Iris, and clean the Light™ Stage window with circular movements.

**Note: Visually inspect the centering Iris  
To ensure that it is clean.**



4. To remove fatty materials, immerse the lens cleaning paper in alcohol and repeat step 3 above.

**Note: Ensure that the paper is moist  
however, is not wet – squeeze it on a  
paper or equivalent material.**

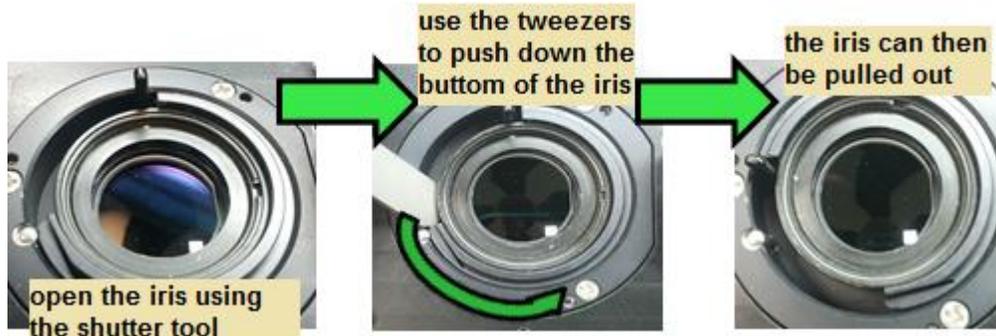


## Appendix A – Replacing the Iris

The Light™ scanner is equipped with an additional Iris for smaller stones (NANO) – for stones between 0.05 and 0.20 carats. For bigger stones (up to 5.0 carats) please use the Iris that was originally attached to the machine.

You may change the Iris according to the size of the measured stone:

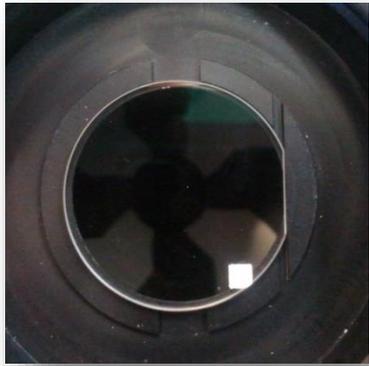
- To remove the Iris:



- To attach the Iris:



While replacing the iris or cleaning the glass stage, verify that the glass stage is positioned properly in its location: the trimmed edge of the glass stage <sup>1</sup> should be positioned facing the cover<sup>2</sup> as shown on the image below, to avoid dirt and greasy stains, hold the glass stage using the plastic tweezers.



## Appendix B - Handling stage window

### 1. Introduction

The stage window is part of the measuring system, and when it's not clean or not positioned correctly, it may impact the measurement of the stone. It is important to keep it clean and make sure it is positioned correctly.

Dirt includes particles like dust or fat layer on the window resulting from fingerprints.

### 2. Secure the stage window while moving the machine

#### 2.1 General

The stage window is freely placed in its holder and can be removed (for replacement or for cleaning). The stage window needs to be secured in order to make sure that it won't move from its position while moving the machine (During shipping or replacing the machine)

When the machine is being shipped to a customer, the stage window will arrive secure with the centering Iris close on the securing sponge:



2.1.1. Open the machine cell cover and open the centering iris:



2.1.2. The sponge is placed on top of a rice paper on the stage window. The rice paper prevents the sponge particles reaching the stage. When closing the centering Iris on the sponge, the sponge is pressed preventing the window to move freely.

- 2.1.3. Remove the sponge and the rice paper using the plastic head tweezers. It is important to keep the sponge in a known location so it could be used again for cases the machine has to be relocated.



- 2.1.4. After the sponge was removed, make sure that the stage window is clean. If it isn't clean, follow step 5.2 (stage window cleaning) it has to be cleaned before starting to work with the machine.

### 3. Secure the stage window before packing

**Note: Don't relocate the machine without securing the stage window, it might move from its position and get scratched, get broken or lost.**

- 3.1. Place a small lens cleaning paper (or other clean paper – toilet paper or absorbent tissue paper) on the stage window:



3.2. Place the sponge above it using tweezers:



3.3. Carefully close the centering Iris on it:



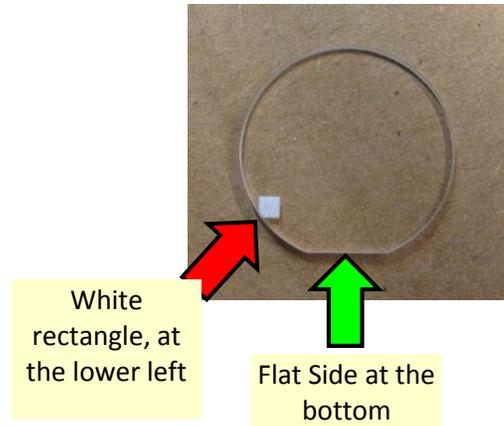
3.4. Close the machine cover and secure it (It is recommended to secure it using tape):



## 4. Stage window position and orientation

### 4.1. General

The stage window has the following shape:

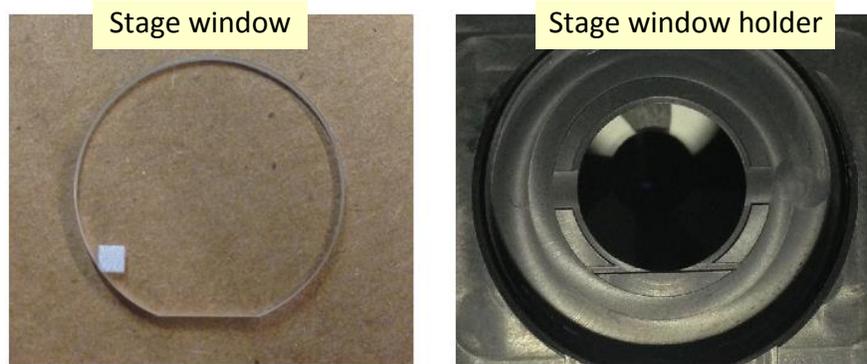


The flat side is designed to ensure that the white rectangle is placed at the correct side and remains at the same position after removing the window for cleaning or replacement.

**Note: The white rectangle is a target that is being used by the machine for measurement stability. Changes in this target will affect the machine's measurement results, accuracy and repetitions.**

### 4.2. Stage window positioning

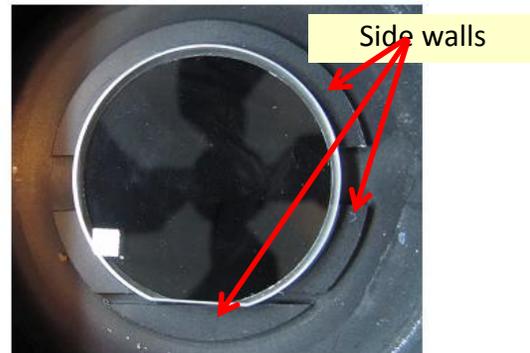
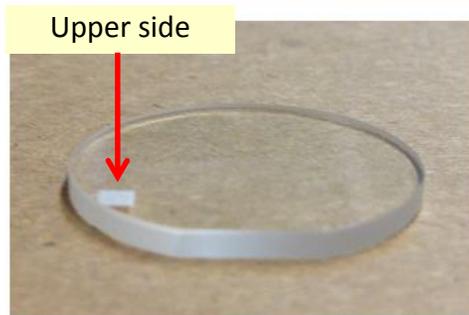
The stage window shape is a truncated circle to ensure its position on the mechanic holder:



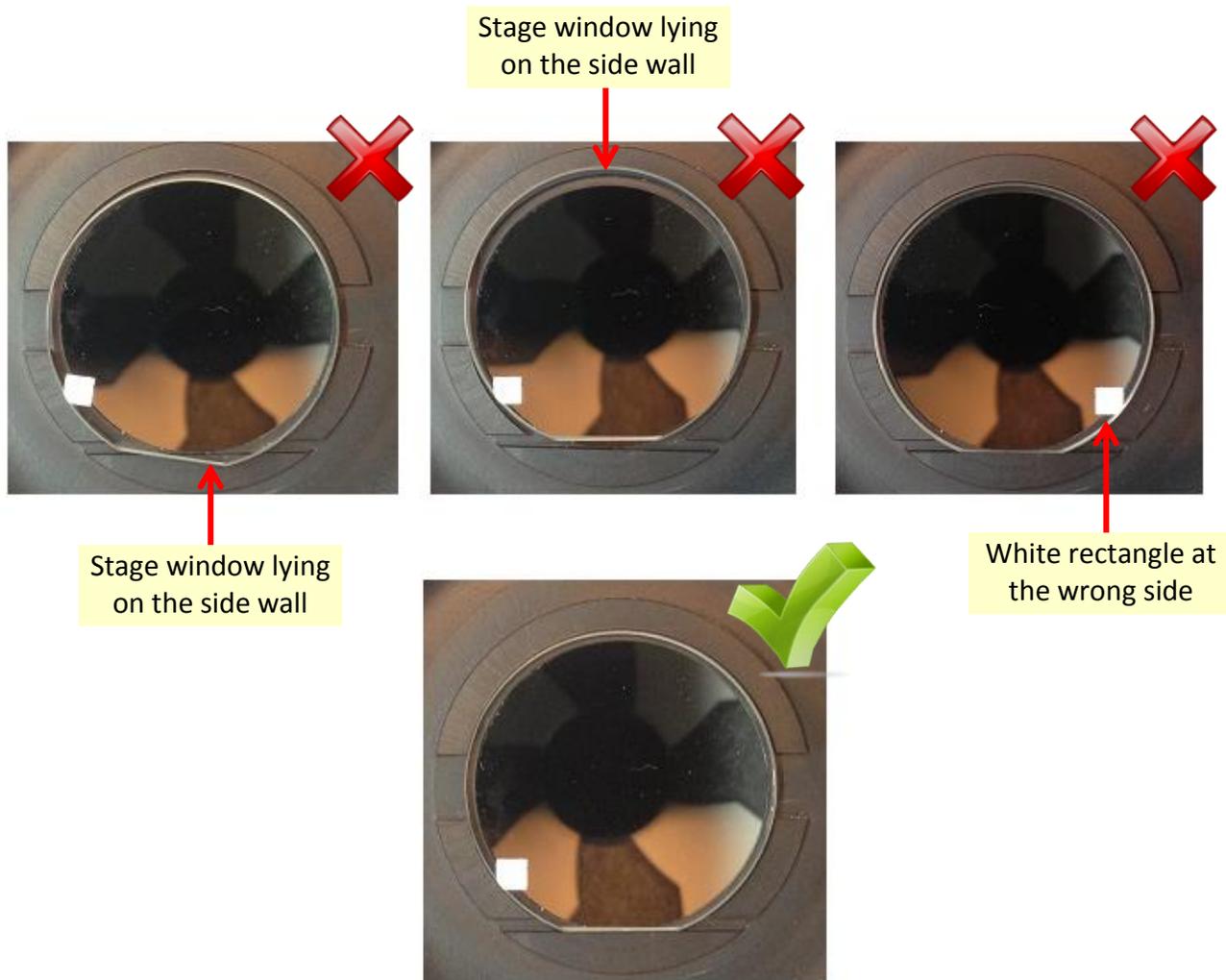
**Note: Hold the edge of the stage window with Tweezers, in any case, if you're holding it with bare hands, hold it from the edges so it won't get dirty from fingerprints**



When placing the stage window at its holder, it's very important to make sure that the white rectangle is as shown at the following images (make sure that the white rectangle is at the upper side of the window plate – see below):



**Note: Make sure that the window is at its right position on the mechanic and not tilted because it's lying on the side wall of the window holder.**



## 5. Stage window cleaning

### 5.1. General

In order to keep the machine clean, clean the window stage with a lens cleaning paper or a soft toilet paper.

In order to clean the dust, it's possible to use a duster, a lens cleaning tissue or other equivalent material. Please make sure it's being used gently so the dust won't scratch the glass window.

In order to remove fat from the stage window, we recommend using Alcohol 95% that can be bought at any drug store (70% alcohol can be used as well), IPA (Iso Propanol) or Acetone.

### 5.2. Stage window cleaning

There are two ways to clean the stage window, the basic method is the simple one but will clean only the upper side of the window, the advanced cleaning method is more complicated and requires taking out the stage window from its place in order to clean both sides.

**Note: When cleaning the stage window, do it gently, make sure you don't scratch it, also, don't clean the white rectangle area from its printing side so you won't damage it.**



**5.2.1. Basic method**

5.2.1.1. Take one sheet of lens cleaning paper, fold it tightly a few times until it is small and firm enough to be used for cleaning.

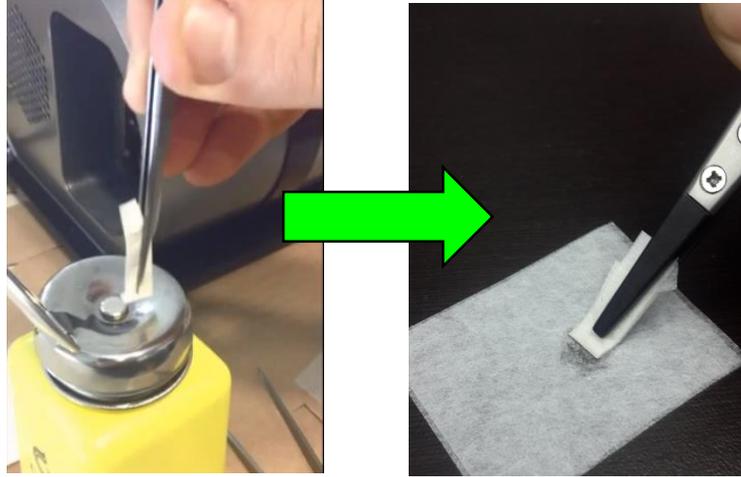


5.2.1.2. Grab the cleaning paper with the plastic tweezers:



5.2.1.3. For dry cleaning (i.e. - dust/dirt) skip to step 5.2.1.5, for wet cleaning (i.e. - fat layer) continue to the next step.

- 5.2.1.4. Open the alcohol bottle and immerse the lens cleaning paper, then immediately squeeze it on a toilet paper or equivalent material so the lens cleaning paper will be moist. (but not wet)



- 5.2.1.5. Make sure the centering iris is open, and clean the stage window with circular moves until the stage is clean, verify that it's eye-clean.



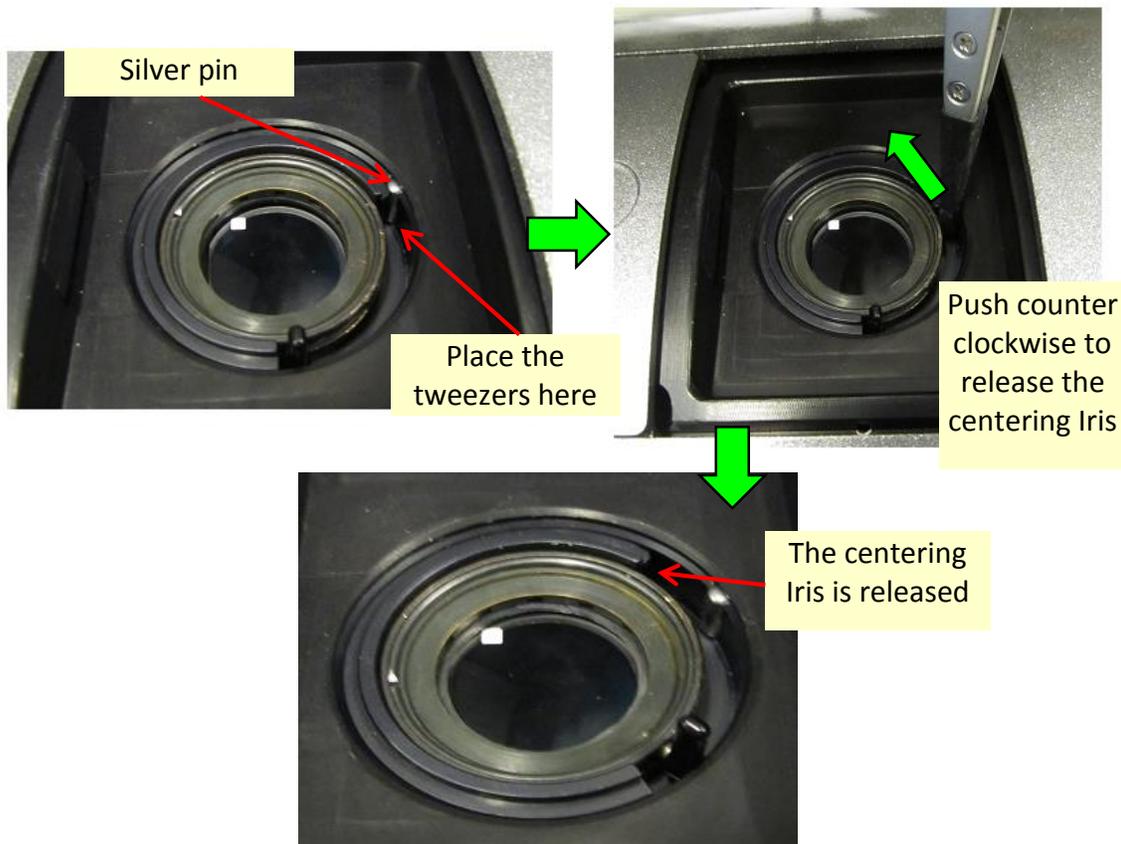
### 5.2.2. Advanced cleaning method

**Use this cleaning method if you wish to clean both sides of the stage window**

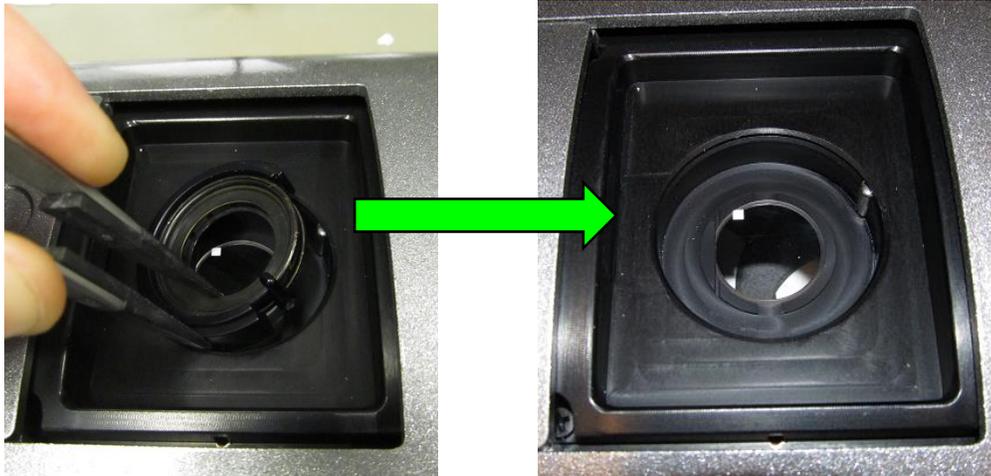
5.2.2.1. To take out the stage window, first remove the centering iris, open the machine cell cover and open the centering iris:



5.2.2.2. Place the tweezers next to the silver pin, at the opposite side of the iris lever, then push the mechanic (not too strong) counter clockwise until it will be released from the silver pin:



5.2.2.3. Using the tweezers, gently pull the centering iris out:

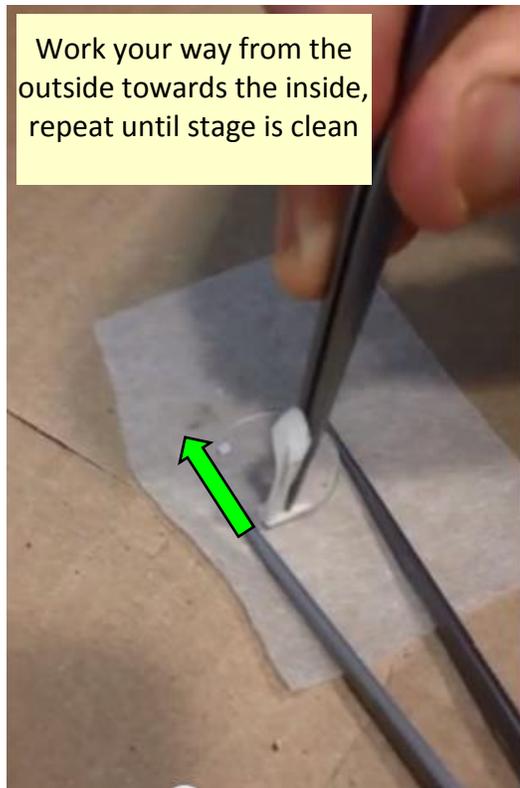


5.2.2.4. Place a lens cleaning paper sheet (or other cleaning paper) on the table, put the stage window on top of a lens cleaning paper.

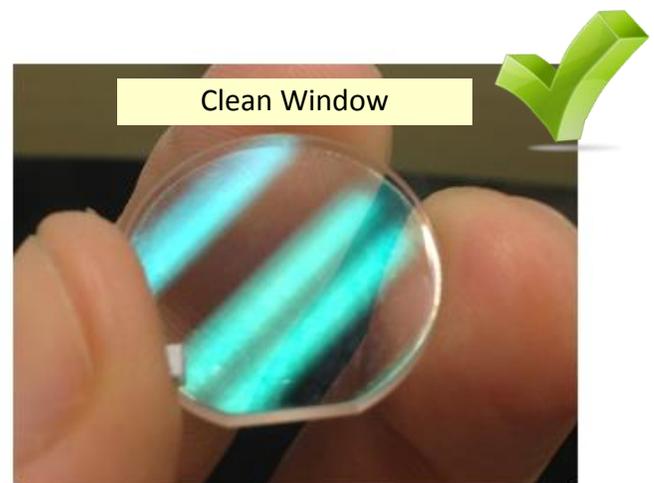


5.2.2.5. Grab the folded lens cleaning paper with your tweezers and gently, wipe off any fatty remains from the window stage, pull away any dirt or remains of oil, turn the window to the other side, and repeat this step to clean the window from its second side.

**Note: be careful at this stage not to wipe off the white rectangle area from its printing side.**



5.2.2.6. To make sure that the stage window is clean, hold it from the side and with the reflections, see if the window is clean:



5.2.2.7. After cleaning the stage window, place back the stage window as explained on **section 4**.

5.2.2.8. Open the centering Iris and place it back to its mechanic position where the Iris lever is on one side and the Silver pin is on the other side:



The Iris lever and the Silver pin are on the same side, it will be impossible to lock the Iris back

- 5.2.2.9. Place the tweezers between the iris lever and the Iris mechanic and push it (not too strong) clockwise until it will lock on the Silver pin:



**Note:** For additional details, please watch the movie <https://youtu.be/ZPsYbl0f5mA> or scan the QR.

