Dear valued customers,

Instructor™ 3.0 Professional Diamond Studio software release brings new technologies, new options and new possibilities. Explore and discover more of the application, .....More of your diamonds.

Supporting documents

1. Technical Notes.pdf
2. Installation Guide.pdf
3. http://www.youtube.com/user/SarinTechnologiesLtd/videos

What’s new in 3.0 ?

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1 New Look, New experience

New user interface that creates a more unified, coherent, easy to use and productive user experience. The 3 main capabilities of Instructor™ are divided into 3 tabs: Measure | Stone | Mark.

1.1 Measure Tab

The new user interface (UI) of the Measure tab is composed of the following elements.

- **Title bar** = top level information on the version and Stone, and the menu for additional options and settings.

- **The Header** = includes the setup for the measure process. Includes the stone name, shape, cut-stage and scan type. At the right end is the ‘Automation button’ that executes a sequence of common actions in a single click, see more in a section below.

- **The output bar** = gathers the most commonly used actions in one place, and 1 click for: print, save, or rotate the diamond to the 1st facet.

- **The Video** = full video canvas, to review the stone position and scan.
- **Control** = Video tools and control (vacuum, zoom, stage center ...etc).
1.2 Stone Tab

All your diamond information in 1 place.

- **Title bar** = give the 4 C’s high-level info on the stone. Same as in Measure tab (section above).
- **Output bar** = gathers the common used actions of: Print, Save, Export, Preview and Rotate H/W in 1 click. Same as in Measure tab (section above).
- **Header** = header includes 2 rows of high-level information of the stone.
  - **Real** = the upper row is the *current row*, which is the stone just scanned / opened.
  - **Recut** = Lower row (in blue) is the active Recut stone information
- **Interfaces** = is a tab control to move between different views of the diamond.
  - This includes: Table/3D | Full 3D | full table | dual 3D | Hearts & Arrows view.
- **3D / Video canvas** = the right side panel that includes the Stone 3D, and its supporting tools, controls and options.
  - **Recut panel** = expanded panel with more recut tools and options for virtual-polish the diamond
  - **Tools** = different tools to view, assess and analyze the stone.
  - **Control** = lower panel to control the visual display, position and guides.
- **Table** = the alphanumeric information of the stone, this can be edited and customized with the Table editor (under settings menu)
- **Grading system** = set all views below according to the selected grading system (lab)

1.3 Mark tab

Mark tab, and laser marking is not supported in version 3.0.
2 Fancy modeling

New and improved fancy modeling algorithms for 4 shapes: Pear, Marquise, Oval and Cushion

Please visit our new YouTube channel
....more videos, clips and tips!

http://www.youtube.com/user/SarinTechnologiesLtd/videos
3 Recut

The Recut panel groups all the Recut options, settings and preferences to virtually polish the stone. The recut panel is now located above the 3D / Video view.

Note- Instructor™ 3.0 supports Auto recut for Round stones only!

1. The Recut panel expands all recut and virtual polish tools and capabilities.
2. Labs list = set the preferred grading system for the recut process to consider.
3. User limits = limitations and user preferences to the recut, these are the same as in Instructor 2.6. For example, limit the max culet size to 0.1% even though Lab might permit 1% as Excellent. 
   Note – the editor to set up limits is yet to be implemented! Therefore setup / changes needed to be done using the previous Instructor™ installations and manually copy the ‘Grading data’ files to the 3.0 folder (see tech notes)
4. Cut stage = 8-cut, 16cut or full round brilliant
5. Cut, the proportions the Recut will follow
6. Sym, the max deviation limitation the Recut will follow (as was set in the old Grading system editor, see pic above)
7. Recut type, Quick and Asymmetric. Note – recut is working on best efforts approach, trying to fulfil all target goals.
8. Recut – combo button that starts the recut process. Include also the partial recut options of Crown or Pavilion recut.
4 Multiple Recuts

Instructor™ now supports multiple recuts, meaning that a single stone can be virtually polished in several different ways to create several different recut solutions allowing the user to choose from several alternatives.

Every new recut created is saved in the HEADER control.

![Multiple Recuts](image)

At any given time only a single recut can be set as the active recut. All tabs, views, 3D and information presented is of the one active Recut. For example: 'StoneA' was virtually recut 3 times differently, to Ex, VG and crown only, user can then switch between the 3 Recuts 1, 2, 3.... by using the header selection.

Note- The number of recuts is limited to 10.
5 Excluders

Excluders is a new feature in Instructor™ that gives the ability to control and limit the recut process. Excluders are 3D balls that push out diamond’s parts to be ignored and excluded from the final RECUT stone. Excluder’s purpose is to identify surface defects such as a Naturals, or surface inclusions that a user would like to exclude from the final virtually polished stone.

1. **Add** a new Excluder, click and position the mouse cursor on the 3D stone.
2. **Reposition** the excluder by either mouse left click drag, or the navigation keys.
3. **Show/hide** – toggles visibility of the excluder. A hidden excluder will still influence the recut.
4. **Size** - the diameter of the ball in microns. Default is 250
5. **Enable / disable** - disabled excluders will not be considered in the recut process.

5.1 **Mouse control**

Mouse left click = position the ball excluder.
Mouse left click drag = re-position the ball excluder.
Mouse wheel = size -\/+ of the ball excluder.
Mouse right click = depth increase of the ball excluder.

5.1.2 **Excluder options**

Change ball colors and default size of ball. Factory default size is 250 micron.
6 Automation

Automation is a sequence of several actions that are grouped into 1 click. For example, *Measure + Print + Save* sequence. Automation is done by configuring and grouping the most used actions into 1 click of the measure tab Main button (see image below). User can define up to 5 automations.

Actions that can be automated:

- Open stone info
- Quick Rotate
- Measure
- Print report
- Print Label
- Export
- Save to SRN
- Save to Database
- Rotate H.W (red arrow)
- Go-to tab: stone

![Figure 1 - Automation setting window](image)

6.1 Automation set-up

The automation settings are located in the ‘Automation settings’ window. This window can be reached via the menu, by selecting the ‘Settings’ menu and then the ‘Automation’ option, or from the Start button dropdown menu, in the Measure tab. See Automation dialog on the figure-1 (above).

Make a selection for a bundle of actions to be executed automatically in 1 speed automation.

After defining a speed-automation, allocate a Name, Icon and slot (from 1-5) and save. All your automations are waiting to be executed in the Start-button expander (right button dropdown).
7 Speed views

What is your preferred visual information on 3D? Yes, it depends when/where/what?

Given that different situations during the polishing process requires different visual information, this where the ‘speed-views’ are coming at your service. Same as telephone speed-dials, customize your referred information into 1 click short cuts.

- Supports both 3D and Video customizations
- Define up to 3 speed-views per item.
8 GO-TO

GO-TO is a quick 1 click shortcut to a specific location on the stone.

Supported in both 3D and Video, the user can quickly jump between different interesting locations on the stone, for instance, the position in which the culet-off-center is maximal. Or the location of the minimal girdle valley for example.

9 Hearts & arrows

A new ray-tracing engine to produce the Hearts & Arrows (H&A) prediction of a stone based on the light trace that going through the diamond.

Save the generated Hearts + Arrows images to hard drive by clicking the button in the lower control panel.

Notes:

- H&A estimation is based on the outer geometry of the stone and ignores clarity issues (e.g. inclusions) utterly.
- This feature requires a NVidia® Graphic card, that support CUDA technology. Please see more in the technical notes of this version.
10 Backwards compatibility

10.1 Reports, Views & Labels
All past Reports, View, and Labels from old Instructor™ or DiaVision™ are supported and can be moved into 3.0 and are supported. All can be accesses via the Print-preview button in the output bar.

10.2 Grading systems
All previous Grading systems (i.e. DIV and INS) including user-customized grading systems are fully supported.

*Note: to manually move old grading system to 3.0, you need to copy the grading files from \GradingData\ folder to the new 3.0 installation similar folder of the same name.*

10.3 Printer settings
Old 2.6 printer settings can be migrated and copy to the new 3.0 folder.

10.4 Recut user limits and Symmetry
Old 2.6 recut settings can be migrated and copy to the new 3.0 folder. Since the user interface of Grading-system is yet in place, manual migration (copy & paste) is required. See more in the appendix and known issues.

10.5 File formats (SRN, SRX, DAT, ASC and STL)
- SRN - fully supported
- DAT – fully supported.
- SRX – still under development and not supported officially. do not save, load SRX files
- STL / ASC – not supported.
11 Options & Customizations

11.1 3D visual - speed views
Use the control panel 3 x speed views buttons to quickly jump between different 3D overlay settings. For example: 3D that is opaque, showing facets’ angles and indexes and girdle min guidelines.

11.2 Output bar
Customize your output bar (settings menu) and set the default behavior (on-click) for each button in the bar, for example the single click report print.

11.3 Options window
Control 3D Printer, settings, Output bar, Excluders settings and default configurations

11.4 Grading data
As Instructor™ 3.0 still does not have the editor window UI, use Instructor™ 2.6 Grading editor for setup and currently need to manually copy the files. See appendix A.

11.5 Recut limits
3.0 does not have the editor window UI, use Instructor™ 2.6 Grading editor for setup (temp) and currently need to migrate files manually. See appendix A.
11.6 Table editor

To customize the table section, open the Table-editor, under the menu ‘Settings > Table editor’, this opens is the Table-Template-Editor window. The window is divided into 2 sections, the upper is the **STONE** section. The lower is the **FREE** section.

**Stone** section = user can select (but not change) the stone items he wish to be displayed in the table, by using the checkboxes of rows/columns.

**Free** section = user can add ANY valid accessor to the list.

2 April 2014
12 Rotate H/W to selected facet

Rotate to selected facet gives the ability to rotate the real stone to the H/W red-arrow, so the 3D selected facet is in front of the HW arrow.

Similar to previous version this feature is applicable to all shapes. The prerequisites: stone is measured (not loaded) + 1 active selected facet. To use this feature, simply right-click on 3D facet to open the Mouse context menu than click on “Rotate H/W to selected facet”

Note* Context menu can be open in stone-viewer 3D only.

13 Snapshot Print

Snapshot print is a 1-click ‘What You See Is What You Get’ on the 3D viewer print. Snapshot new button in the output bar prints the 3D exactly as they are seen. For example, the Mirror symmetry tool in the specific 3D spatial position / orientation.

The printable area is the 3D region. See pink border in the image.

Printer Setup: Snapshot print uses the same printer as defined for Reports printer. Use the Options window to set up the printer.

Adding text, logos, Accessors to the final print:
Customizing your Printed snapshot can be done by modifying the preserved “report Image.xml”report file (under \Reports\ folder).

Use the ReportEditor.exe tool (under menu Settings >> Report editor) to customize the final layout and information.

Save as Image: Snapshot Save as includes also additional capability to save to a file. Simply hover on the out-put bar snapshot icon to see the dropdown expended save option. Keyboard shortcut Ctrl+P triggers snapshot print.
14 Auto Stone name & Save to Database

New OPTIONS window features.

**Automatic naming** can now be applied across the system, see image to the right [1] a new checkbox will set the auto-generated name and update the stone name property, this will effect prints, save, the [Genenal.name] accessors...etc.

[2] Save to Database is separate and can be added on top the regular file save. This enables to save in 2 different locations with 1 click. For example save SRN file and to Database with single click on the save button.

15 Shape selector

New Shape selector now includes both **Recent** used shapes and **Favorites**. User can add to favorites list by clicking on the yellow star at the bottom of each shape item.
## 16 Keyboard shortcuts

<table>
<thead>
<tr>
<th>Shortcut</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ctrl + I</td>
<td>Stone into</td>
</tr>
<tr>
<td>Ctrl + R</td>
<td>Quick 180 rotate</td>
</tr>
<tr>
<td>Ctrl + A</td>
<td>Shape selector</td>
</tr>
<tr>
<td>Ctrl + V</td>
<td>Vacuum on/off</td>
</tr>
<tr>
<td>Ctrl + T</td>
<td>Rest stage position</td>
</tr>
<tr>
<td>Ctrl + F</td>
<td>Zoom in</td>
</tr>
<tr>
<td>Ctrl + J</td>
<td>Stage centreline</td>
</tr>
<tr>
<td>Ctrl + Enter</td>
<td>Automation (king button)</td>
</tr>
<tr>
<td>Ctrl + 1</td>
<td>Table / 3D View</td>
</tr>
<tr>
<td>Ctrl + 2</td>
<td>Full 3D view</td>
</tr>
<tr>
<td>Ctrl + 3</td>
<td>Detailed table view</td>
</tr>
<tr>
<td>Ctrl + 4</td>
<td>Dual View</td>
</tr>
<tr>
<td>Ctrl + 5</td>
<td>Hearts &amp; Arrows View</td>
</tr>
<tr>
<td>Ctrl + O</td>
<td>Open file</td>
</tr>
<tr>
<td>Ctrl + Q</td>
<td>Open Database</td>
</tr>
<tr>
<td>Ctrl + S</td>
<td>Save file</td>
</tr>
<tr>
<td>Ctrl + D</td>
<td>Save Database</td>
</tr>
<tr>
<td>Ctrl + M</td>
<td>Start measure</td>
</tr>
<tr>
<td>Ctrl + k</td>
<td>Options window</td>
</tr>
<tr>
<td>Ctrl + E</td>
<td>Export</td>
</tr>
<tr>
<td>Alt + F4</td>
<td>Exit</td>
</tr>
</tbody>
</table>

### 3D Video viewer

- **A**: Current only
- **F**: Wireframe
- **D**: Stone-in-stone
- **S**: Recut only
- **1**: Speed-view 1
- **2**: Speed-view 2
- **3**: Speed-view 3
- **Q**: Top view
- **W**: Bottom view
- **E**: Side view down
- **R**: Side view up
- **Spacebar**: 3D / Video
17 Known issues

17.1 Recut

Warnings - Recut warnings are not yet supported in 3.0. Will be supported in the future.
Recut locks - Recut locks are not yet supported in 3.0. Will be supported in the future.

17.2 User shapes (customized shapes)

User shapes are partially supported, by FNC grading system support. New shape wizard is not supported.

17.3 Database & migration

Stones Database currently saves in temp SRX file format, therefore it will not be migrated once the final-SRX format will be released.

17.4 SRX – temporary support

SRX file format is unsupported and NOT official released. Do not save or load SRX files.

17.5 Error messages & user dialogs windows

Error messages and user dialogs windows might sometimes not modal, means hidden behind the main application window. User need to press alt + tab to bring them in front.

18 Support

18.1 Minimal System requirements (HW/SW)

Required (minimal) computer prerequisites:

- Intel I5 core , 4 GB of ram
- NVidia graphic card with CUDA support (otherwise Light-performance will not work)
- Win 7 32 bit / 64 bit  (No win XP support! ‘Admin’ user only for installation , see more in install guide)
- Microsoft dot Net 4.5 is required

18.2 Hardware

The following systems are qualified and supported with 3.0:

- DiaMension™ HD
- DiaMension™
- DiaScan™ S+
- DiaMobile™ XL
- DiaExpert
## Left outs & unsupported features

<table>
<thead>
<tr>
<th>#</th>
<th>Item</th>
<th>remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Marking</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Save to STL file</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Save to ASC file</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>New Shape Wizard</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Calculator (online/offline)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Fancy recut</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Polish facet (manual single 3D polish)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Snap measure (2D measurements on screen)</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Price list $ editor</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Search &amp; Find</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Languages (Hebrew / Chinese / Gujarati)</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Advance Admin Configurations</td>
<td></td>
</tr>
</tbody>
</table>
20 Appendix A

OLD Instructor™ 2.6 **Grading editor** (currently need to migrate Grading system files manually. e.g.
DATASET, SGRules, TGRULES, Institute etc..)

OLD Instructor™ 2.6 **Recut User limits** (currently need to migrate user-limits + recut sym files manually)