

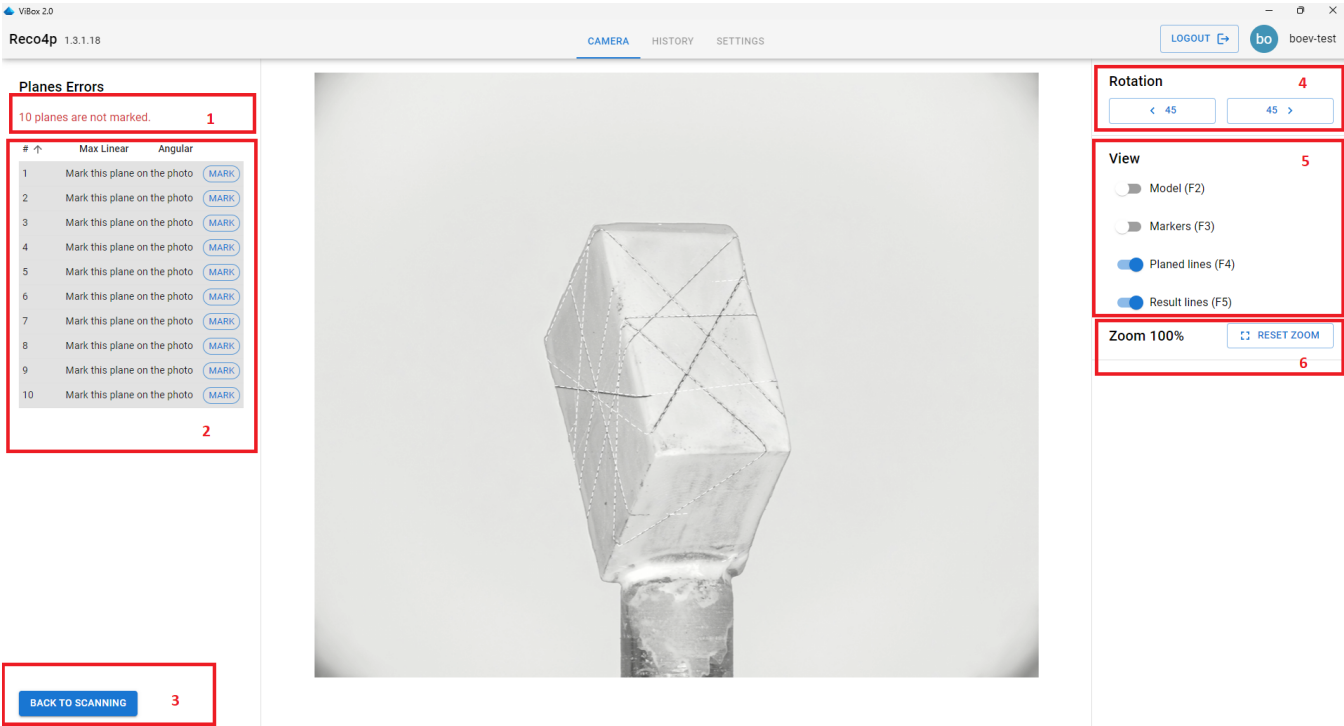
Testing accuracy of laser marking

The second key use case of Vibox Reco 4P software is verifying the accuracy of lines marked on a diamond's surface to confirm that the sawing project has been correctly transferred to the specific 4P cutter's coordinate system.

To perform this verification, follow these steps:

1. Activate appropriate lighting to visualize laser markings
2. Select the project by Project Title and choose the solution for analysis
3. If the previous model registration was successful, the "Check Marking" button will become available. Click it to initiate object scanning
4. Upon completing the scan, you'll enter a special mode for marking planes
5. After marking all planes in the images, you'll receive a final assessment of linear and angular marking accuracy - determining whether the object is suitable for sawing or not

Below is the GUI layout for plane marking:



1. **Current Marking Status:** Continue marking until the status changes from red.
2. **Planned Planes Table:** Displays target planes requiring photo-based marking. During marking, the system automatically calculates linear and angular errors for each plane, with accuracy status color-coding:
 - Red: Low accuracy
 - Green: High accuracy
 - Yellow: Borderline case
 - Grey: Not marked yetClick the **Mark** button to enter marking mode for a specific plane.
3. **Back To Scanning Button:** Returns to camera view.
4. **Image Navigation Panel:** Toggle between photos. Alternatively, use the mouse wheel for navigation.
5. **Layer Control Panel:** Manages display layers:
 - 3D model
 - Sarin markers (if available)
 - Planned planes
 - Resulting planes (user-marked from photos)Each layer has dedicated toggle shortcuts (F2-F5).
6. **Zoom Control Panel:** Shows current digital zoom level with a reset button. Additional features:
 - Point-specific zoom: Hold Ctrl + mouse wheel
 - Image panning: Middle mouse button drag

When entering plane marking mode (by clicking the Mark button), the Marking section appears with the following functionality:

ViBox 2.0

Reco4p1.3.1.18

CAMERAHISTORYSETTINGS

LOGOUTboeboev-test

Planes Errors

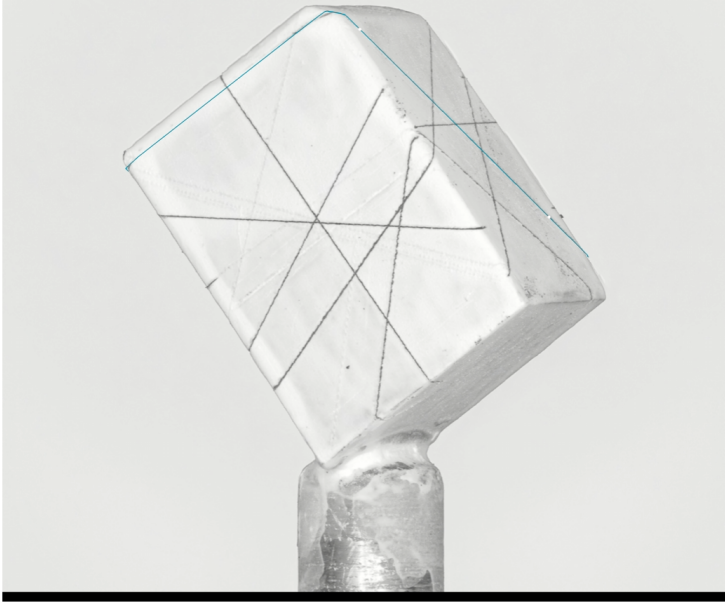
All planes are marked. Error is acceptable.

Max linear error: 70.0μ.

Max angular error: 0.92°.

#	↓ Max Linear	Angular	
8	70.0 μ	0.46°	MARK
9	55.6 μ	0.15°	MARK
4	48.5 μ	0.27°	MARK
1	47.5 μ	0.18°	MARK
6	40.0 μ	0.35°	MARK
7	35.1 μ	0.92°	MARK
10	34.4 μ	0.43°	MARK
3	28.0 μ	0.39°	MARK
5	23.7 μ	0.34°	MARK
2	21.1 μ	0.07°	MARK

BACK TO SCANNING



Rotation

< 4545 >

View

Model (F2)

Markers (F3)

Planned lines (F4)

Result lines (F5)

Zoom 129%RESET ZOOM

Marking

Reference Plane (Space)

Edited Plane (Ctrl + Space)

DELETECLEAREND

1. Highlight the current reference plane (planned plane on the image) - shortcut: **Space**
2. Hide/show the currently edited plane - shortcut: **Ctrl+Space**
3. Clear all plane points (Clear button)
4. Remove the last point (Delete button or **Ctrl+Z**)

When you left click on the marking lines on photo, you add new points to the plane. Add points, until you see that the visualization of result plane fits the photo.

To complete editing, you can:

- Click the **End** button
- Press the **Mark** button on the currently edited plane
- Begin editing a new plane by clicking its **Mark** button

The plane annotation process is demonstrated in the video below.

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