


# Surface Distortion Resample


## Purpose


The Surface Distortion Resample tool is mainly used to correct the rotational movement distortion with the assistance of checkerboard patterns. It combines "Distortion Correction" and "Resampling" into one tool. The correction is performed in 2D.

## Inputs

**Inputs** 

Surface Input

SurfaceImpor...



Name	Description
Surface Input	The surface data that the tool will apply calculation and correction to.

## Parameters

Parameters

Enable Processing

☒

Working Mode

Alignment

▼

Configuration File

Operation

Normal

▼

Alignment Status

Not Aligned

Alignment Status

2022.03.09 15:13:53

Sensor Configuration

Sensor Model

G 2430

▼

Origin X

380.492

mm

Angle Z

-179.813

deg.

Polynomial Order

5

▼

Search Width

6

pts

R Scaling

0.155

Checkerboard Width

11.343

mm

Uncertainty

0.032

mm

Rotation Center as Origin

☐

Output Surface

Point Cloud

▼

Parameters

Enable Processing

☒

Working Mode

Resampling

▼

Alignment Status

2022.03.09 15:13:53

R Scaling

0.155

Checkerboard Width

11.343

mm

Uncertainty

0.032

mm

Rotation Center as Origin

☐

Output Width

200.000

mm

Output Length

200.000

mm

Scale X (0=estimating)

0.050

mm

Scale Y (0=original)

0.398

mm

Output Surface

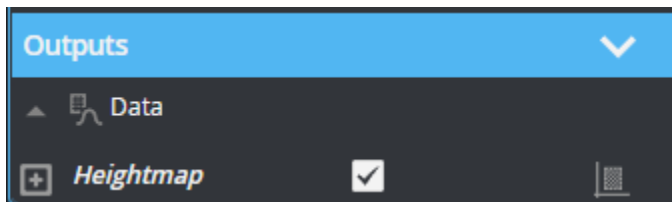
Heightmap

▼

Name	Description
Enable Processing	When enabled, start the alignment calibration or resample process.
Working Mode	Options are Alignment and Resampling, usually Alignment is performed before applying Resampling.
Configuration File	File operations shown in Alignment mode, including <ul style="list-style-type: none"> <li>• Normal</li> <li>• Load</li> <li>• Save</li> <li>• Delete</li> <li>• Refresh</li> </ul>
Sensor Configuration	Collapse param for sensor information shown in Alignment mode, including

	<ul style="list-style-type: none"> <li>• Sensor Model</li> <li>• Origin X</li> <li>• Angle Z</li> </ul>
Polynomial Order	Order of polynomial fitting, only shows in Alignment mode.
Search Width	Search range in pixel when detecting corners, should be at least 1 and never more than 1/5 of the scan line number per square. Only shows in Alignment mode.
R Scaling	Scale in rotation.
Checkerboard Width	Size of the checkerboard square in mm.
Uncertainty	Indicate the quality of the calibration.
Rotation Center as Origin	If checked, use the rotation center as the origin of output data.
Output Surface	Format of output surface, including <ul style="list-style-type: none"> <li>• Heightmap</li> <li>• Point Cloud</li> <li>• Mesh</li> </ul> Note: not support Mesh on sensor due to memory limitation.

## Outputs

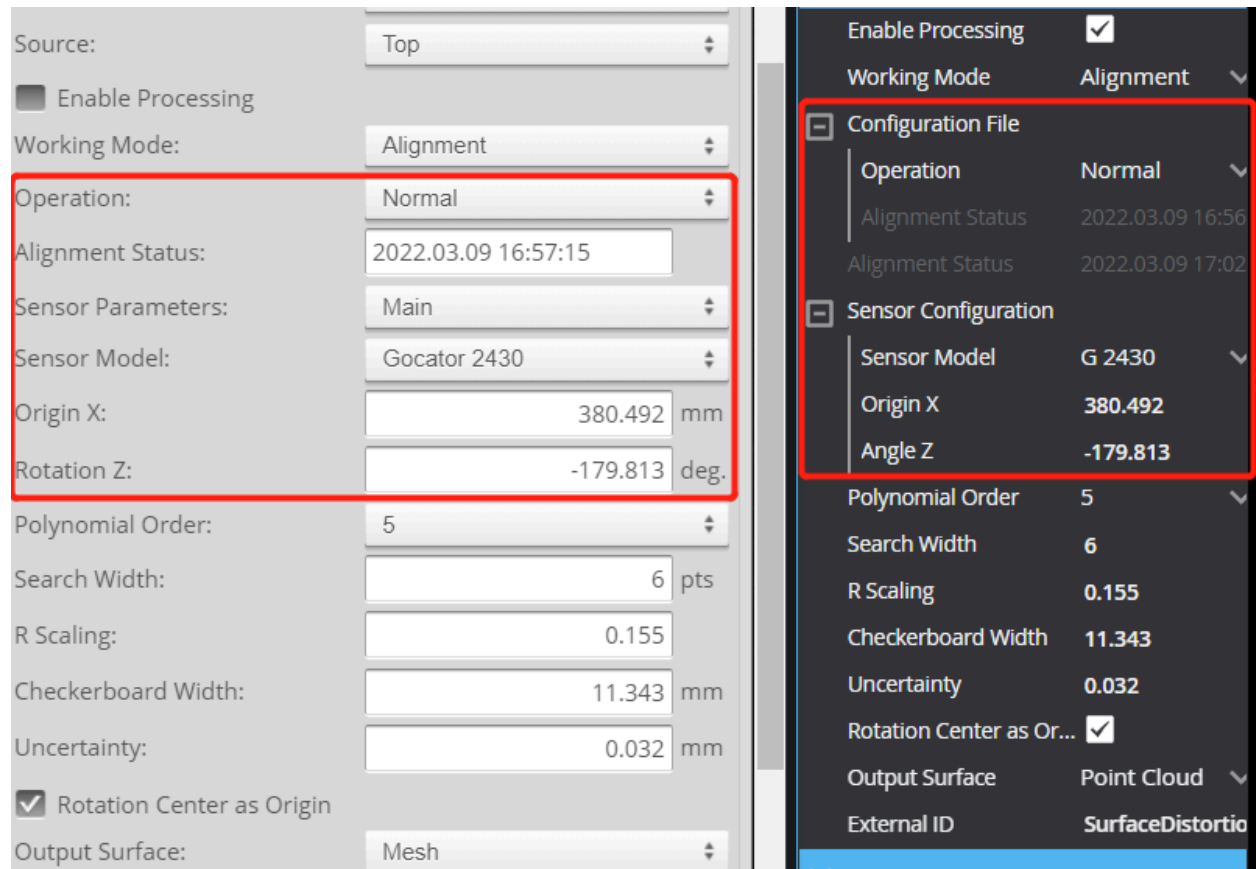


Type	Name	Description
Surface	Heightmap Point Cloud	The corrected surface.

	Mesh	
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## Major Revisions

- The arrangement of some params is different from classic, see



Source: Top

☐ Enable Processing

Working Mode: Alignment

Operation: Normal

Alignment Status: 2022.03.09 16:57:15

Sensor Parameters: Main

Sensor Model: Gocator 2430

Origin X: 380.492 mm

Rotation Z: -179.813 deg.

Polynomial Order: 5

Search Width: 6 pts

R Scaling: 0.155

Checkerboard Width: 11.343 mm

Uncertainty: 0.032 mm

☒ Rotation Center as Origin

Output Surface: Mesh

Enable Processing ☒

Working Mode Alignment

**Configuration File**

Operation Normal

Alignment Status 2022.03.09 16:56

Alignment Status 2022.03.09 17:02

**Sensor Configuration**

Sensor Model G 2430

Origin X 380.492

Angle Z -179.813

Polynomial Order 5

Search Width 6

R Scaling 0.155

Checkerboard Width 11.343

Uncertainty 0.032

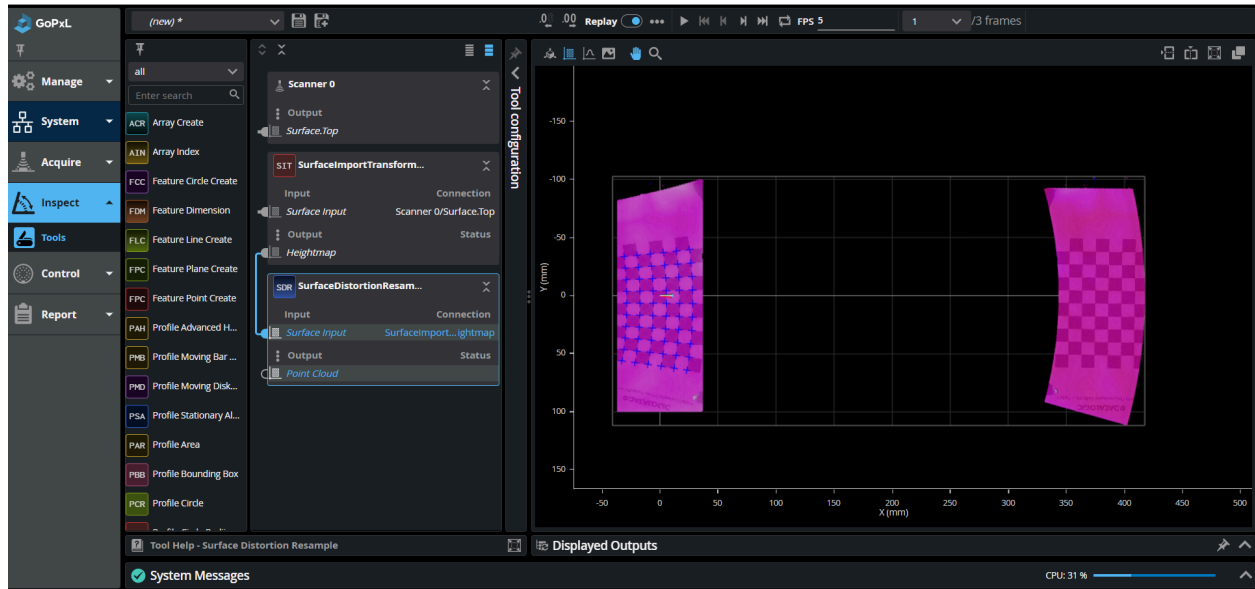
Rotation Center as Or... ☒

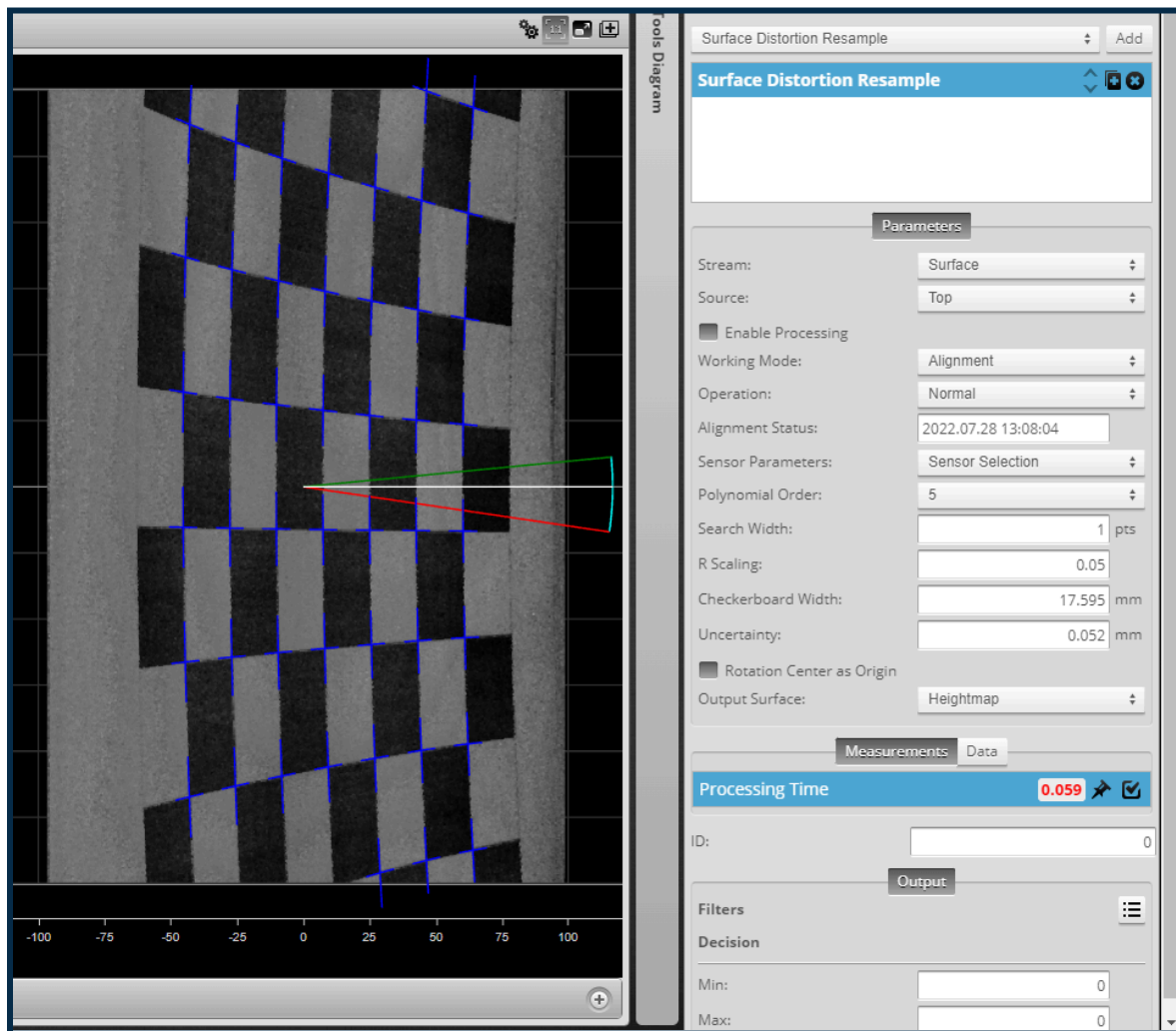
Output Surface Point Cloud

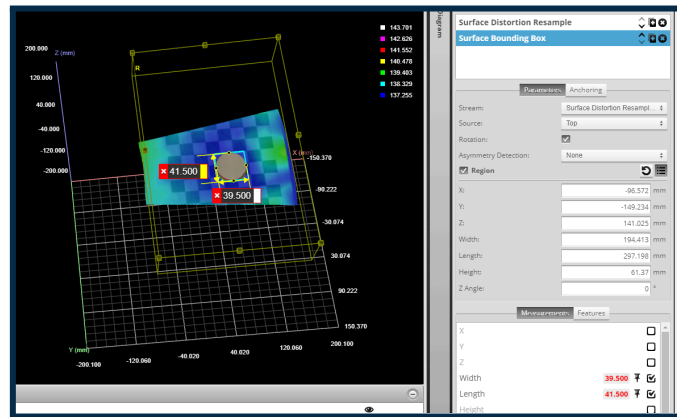
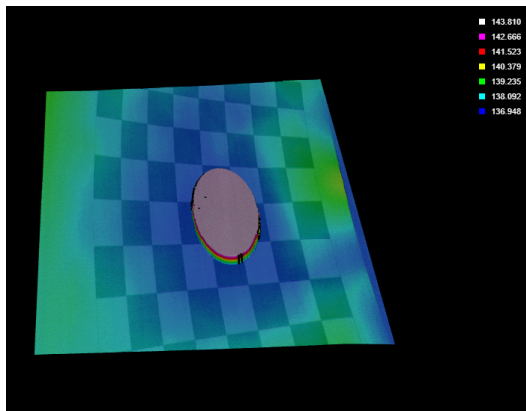
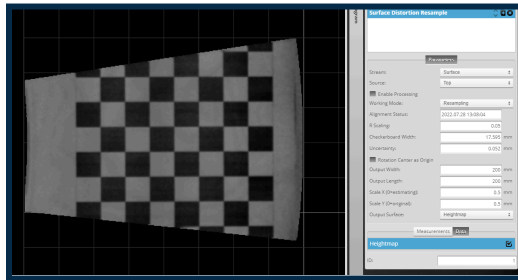
External ID SurfaceDistortio

- Remove the measurement "Processing Time" from GoPxL.

## Application Examples







## Algorithm Details