

Surface Distortion Resample

Purpose

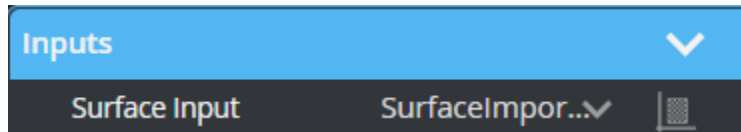
The Surface Distortion Resample tool is mainly used to correct the rotational movement distortion with the assistance of checkerboard patterns. It combines "Distortion Correction" and "Resampling" into one tool. The correction is performed in 2D.

Refer to the following docs for more details about this tool:

[VE-1120 About GDK Tool "Surface Distortion Resample"](#)

[Modification of Surface Distortion Resample Tool](#)

Inputs



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

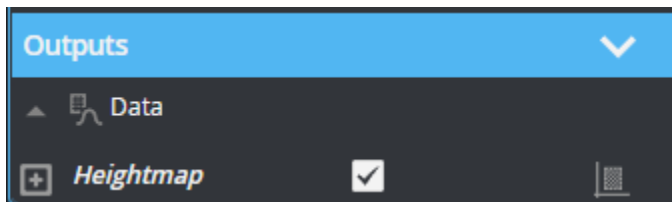
Heightmap

▼

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"> • Normal • Load • Save • Delete • Refresh
Sensor Configuration	Collapse param for sensor information shown in Alignment mode, including

	<ul style="list-style-type: none"> • Sensor Model • Origin X • Angle Z
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"> • Heightmap • Point Cloud • Mesh Note: not support Mesh on sensor due to memory limitation.

Outputs

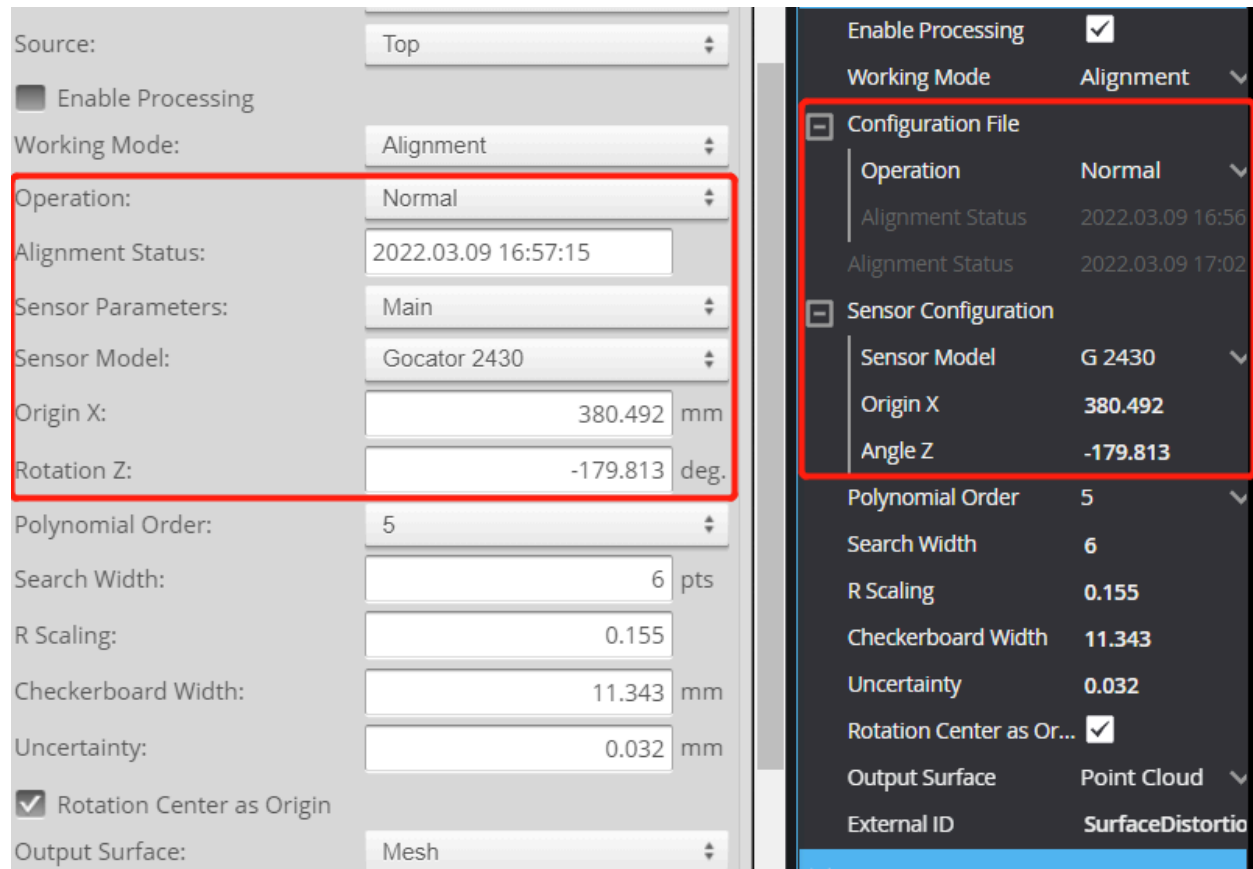


Type	Name	Description
Surface	Heightmap Point Cloud	The corrected surface.

	Mesh	
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Major Revisions

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



The screenshot shows the LMI 3D software interface with two panels. The left panel contains various configuration options, and the right panel shows a summary of the configuration. A red box highlights specific sections in both panels.

Left Panel Configuration:

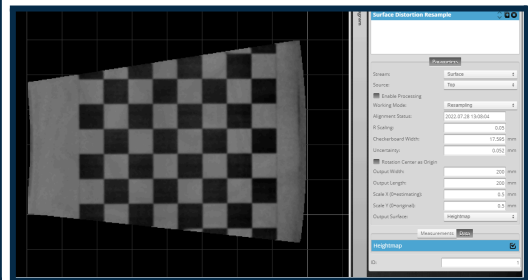
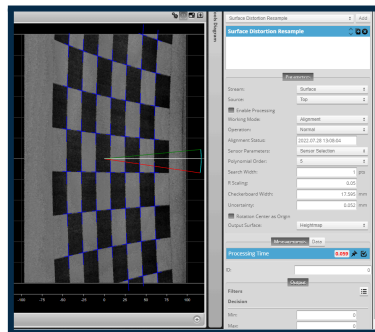
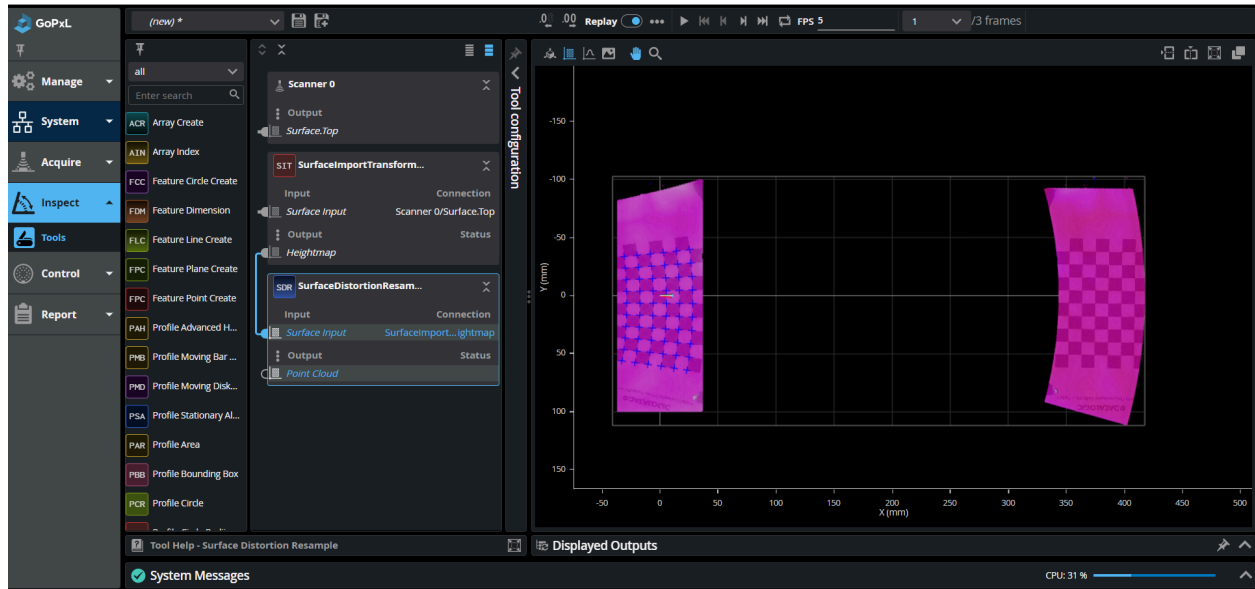
- Source: Top
- ☐ Enable Processing
- Working Mode: Alignment
- Operation: Normal
- Alignment Status: 2022.03.09 16:57:15
- Sensor Parameters: Main
- Sensor Model: Gocator 2430
- Origin X: 380.492 mm
- Rotation Z: -179.813 deg.
- Polynomial Order: 5
- Search Width: 6 pts
- R Scaling: 0.155
- Checkerboard Width: 11.343 mm
- Uncertainty: 0.032 mm
- ☒ Rotation Center as Origin
- Output Surface: Mesh

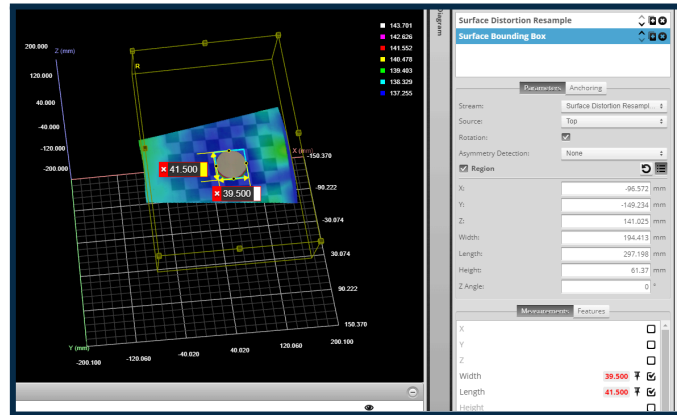
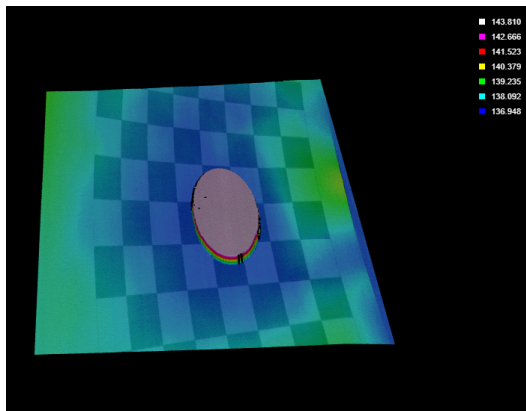
Right Panel Configuration:

- 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