Test Report

opto Konfokal

Inspection of roughness on glass bottles
for Mesurex Instrumentacion Y Control S.L.U, Mr. Raul Jorge Anguita

Your contact person:

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Summary

To determine whether a confocal sensor system IFS2405-0.3 can be used to measure the surface roughness of a glass bottle, a test was set up.

The confocal sensor provides an optical measurement spot with a diameter of 6µm. As this is smaller than conventional tactile measurement probes, the confocal sensor is able to show with even higher accuracy the real surface of a parts.

Application

Measuring Object: Green Bottle

Measuring task: Surface Roughness

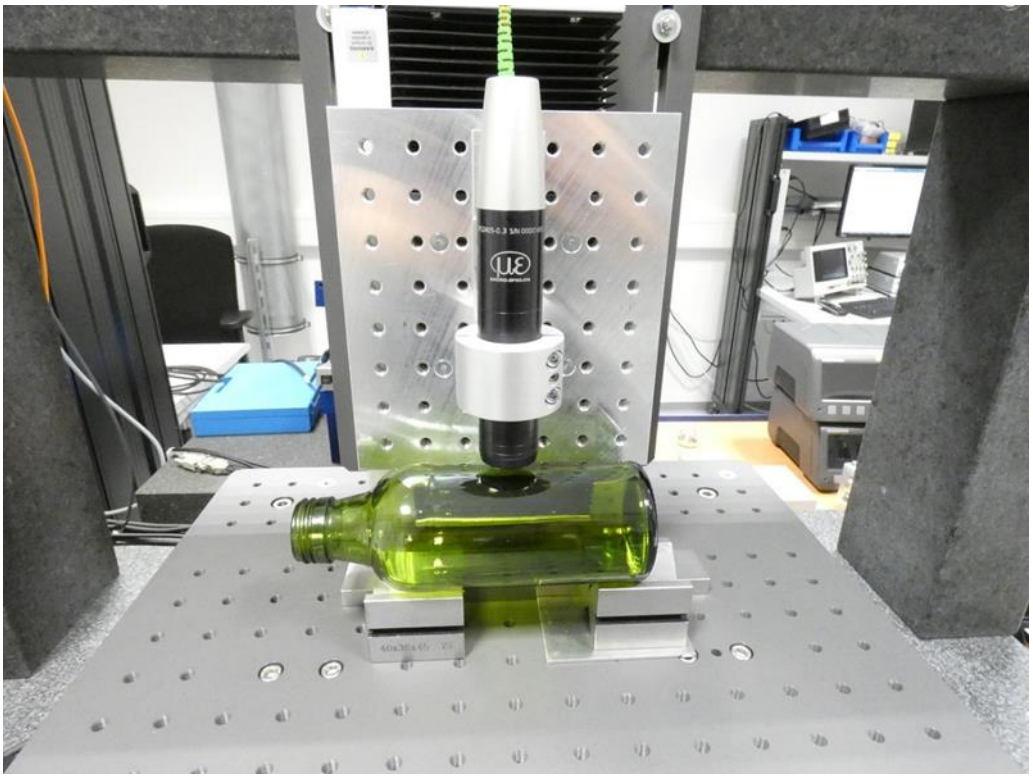
Requirements: Verify achievable repeatability / standard deviation

Test Setup

Components

- IFC2422
- IFS2405-0.3

Test Sequence



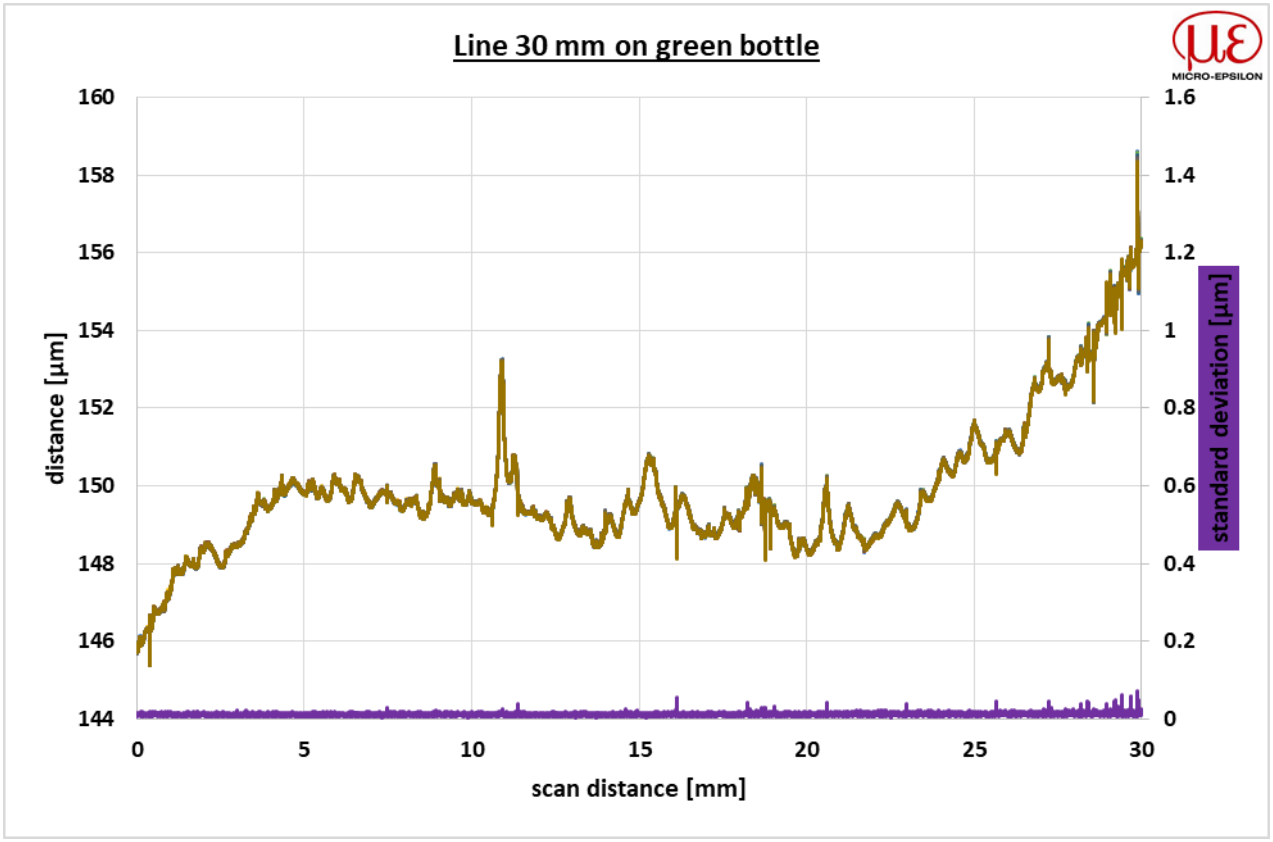
The green bottle has been placed on a movement device and a line of 30 mm has been scanned ten times with a scan rate of 5 kHz and a resolution of 2 μm in the direction of movement.

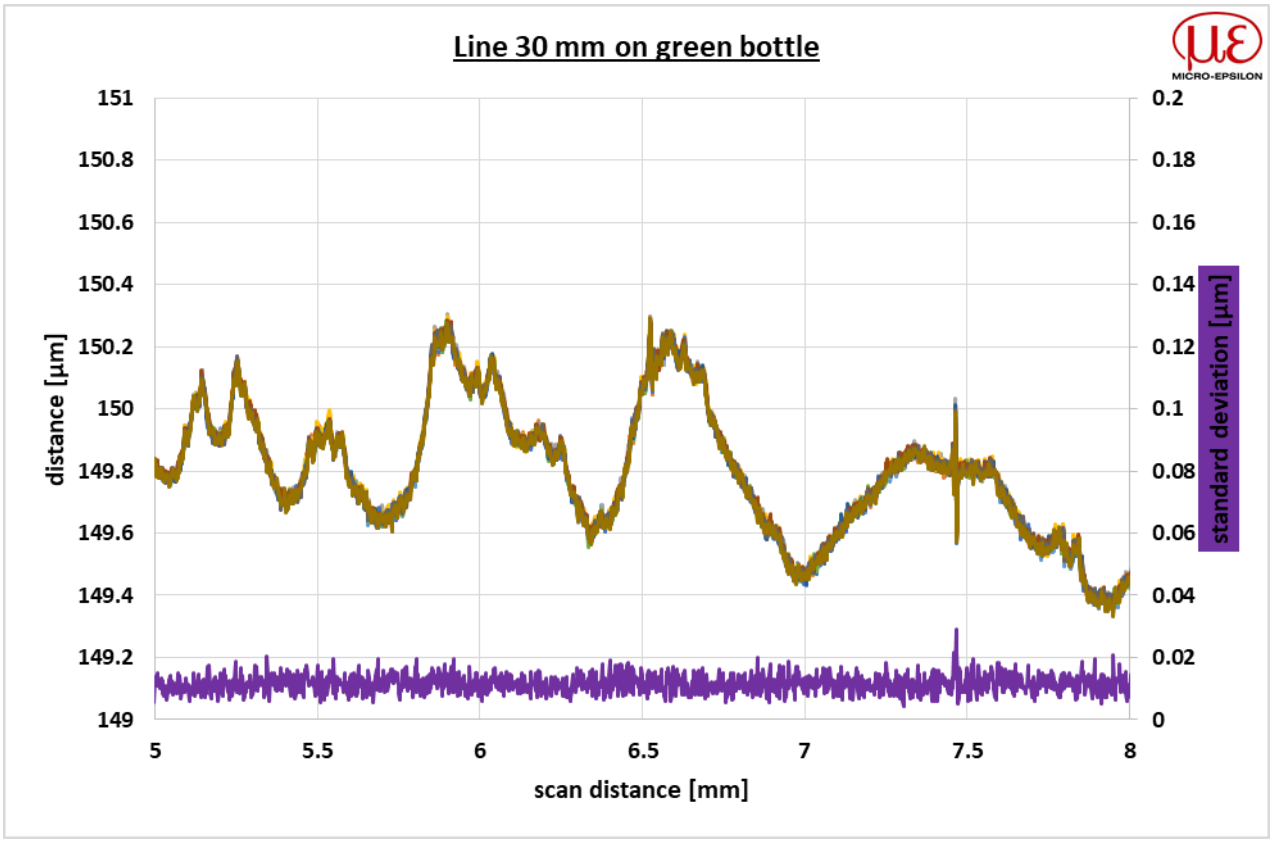
The diagrams show the measuring data and their standard deviation over ten lines.

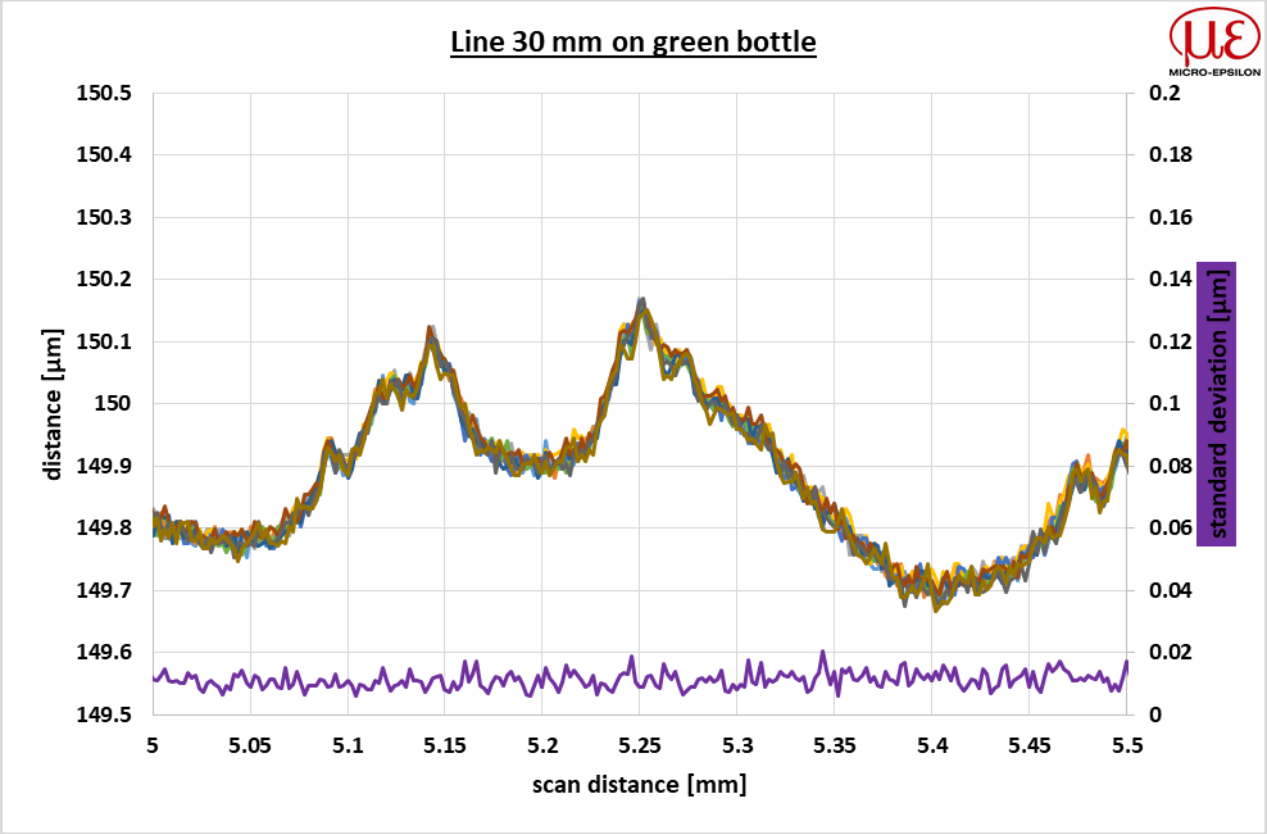
There was no averaging being used for the test.

Results

The resulting diagram shows the 10 lines laying over each other. The standard deviation is showed on the secondary axis. As it‘s hard to see, 3 different zoom levels are shown: 30mm; 3mm; 0.5mm;


Line 30 mm on green bottle
MICRO-EPSILON
distance [µm]
standard deviation [µm]
scan distance [mm]
160
158
156
154
152
150
148
146
144
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0
5
10
15
20
25
30


Line 30 mm on green bottle
MICRO-EPSILON
distance [µm]
standard deviation [µm]
scan distance [mm]
151
150.8
150.6
150.4
150.2
150
149.8
149.6
149.4
149.2
149
0.2
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
5
5.5
6
6.5
7
7.5
8



Evaluation

The test shows that the surface of the bottle can be measured with this sensor with a repeatability <20nm. The test was performed under laboratory conditions, with a precise linear stage.

Next steps & open issues

Send quotation for the tested system

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Test performed by: [CFi]

The described measurements have been done by expert staff with the samples provided by customers using measurements systems and sensors by Micro-Epsilon. The results are free of charge for the customer unless there is a different agreement.
The study enables the customer to estimate the feasibility of a certain measurement task. Micro-Epsilon gives no warranty for the purpose of the result or that the application is feasible in production environment. It's on customer's duty to check the adequacy of the proposed solution for his application.

Template: Untersuchungsbericht_Kunde_en.docx / RHR

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