

Ceramic Glass and Mirror Samples with Scratches

Executive Summary

Optimet's ConoProbe MK10 HD with a 25 mm focal lens was used to inspect samples with scratches. The tests were performed to demonstrate measurement capability. Optimet's Conoscopic holography technology is highly qualified for this inspection, as it permits scratches to be measured and evaluated using a single cross scan at the middle of the scratch (deepest area). Three different samples were supplied:

1. Ceramic plate
2. Mirror plate
3. Glass plate

1. Optimet's Advantages Over Other Technologies:

1. Conoscopic holography – permits scratches to be measured and evaluated using a single cross scan.
2. Collinearity feature enables measuring inside holes and scratches.
3. High lateral resolution.
4. High sampling rate with no need for averaging.
5. Optimet is very familiar with this type of market application

2. Application Description

Scratch inspection using Optimet's ConoProbe MK10 HD with a 25 mm focal lens.

Test settings:

Ceramic plate

- Measurement rate: 9KHz
- X-step: 1 μm
- Y-step: 10 μm

The mirror plate

- Measurement rate: 9KHz
- X-step: 1 μm
- Y-step: 10 μm

The glass plate

- Measurement rate: 9KHz
- X-step: 1 μm
- Y-step: 10 μm
- Laser power level: 35



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3. Results and Observations

Ceramic plate

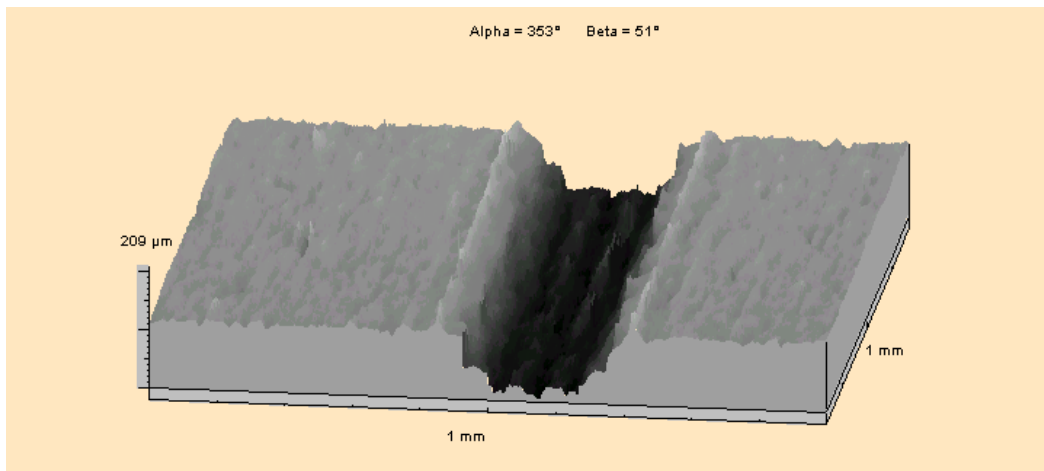


Figure 1 – Ceramic plate 3D presentation

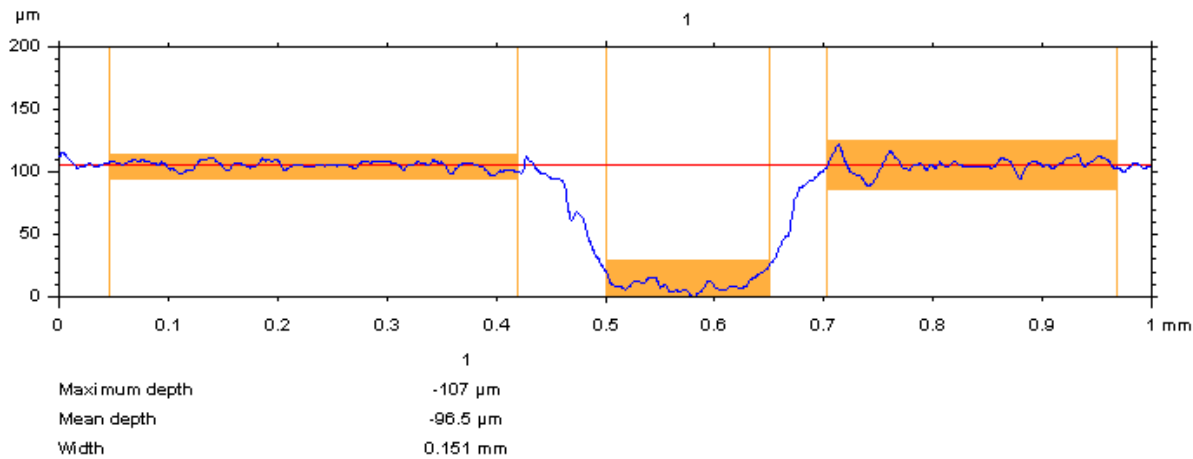


Figure 2 – Ceramic plate profile



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Mirror plate

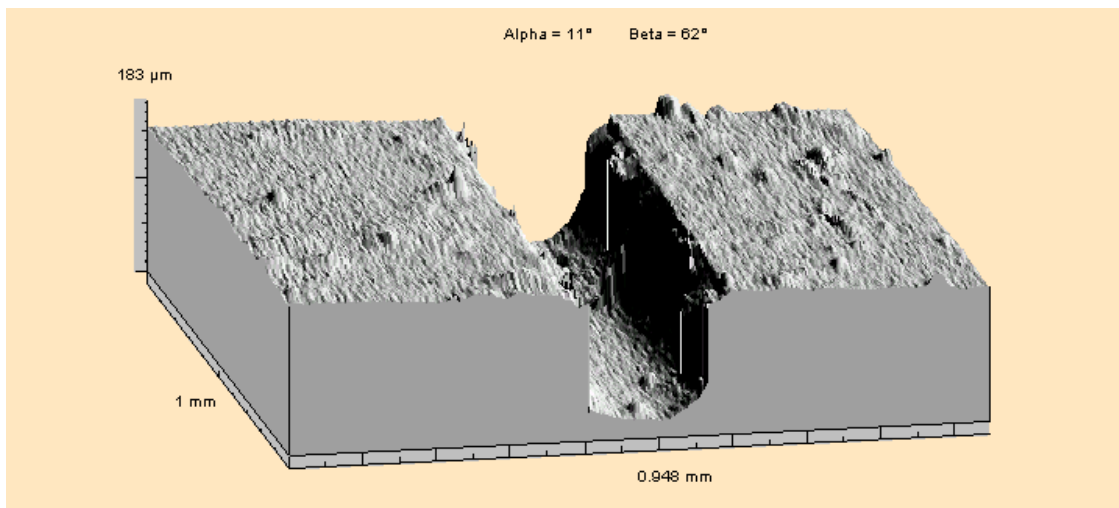


Figure 3 – Mirror 3D presentation

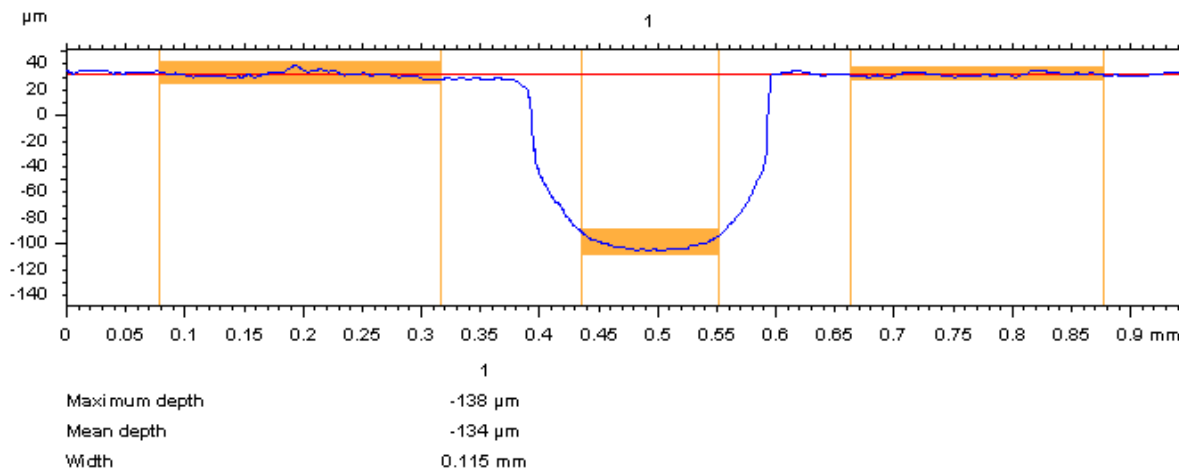


Figure 4 – Mirror surface profile



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Glass plate

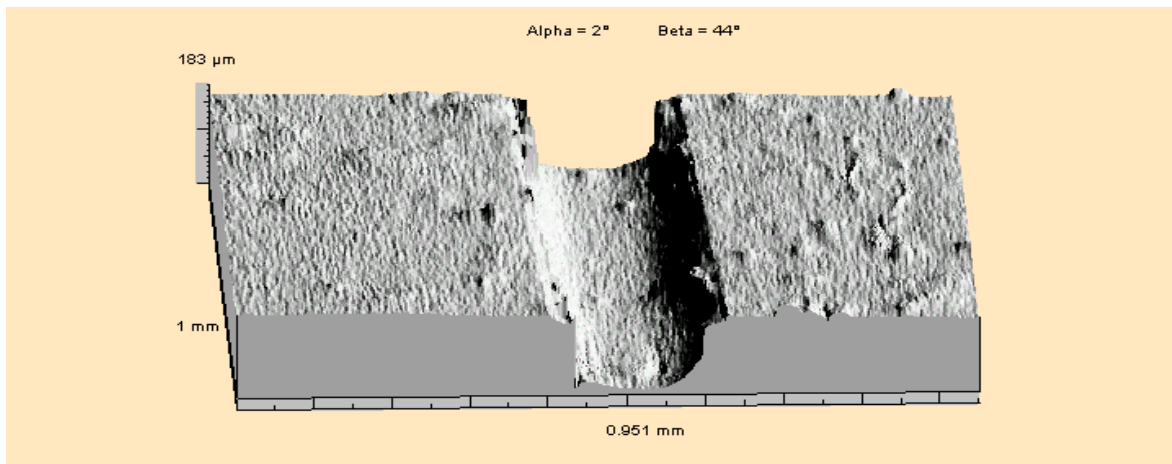


Figure 5 – Glass plate 3D presentation

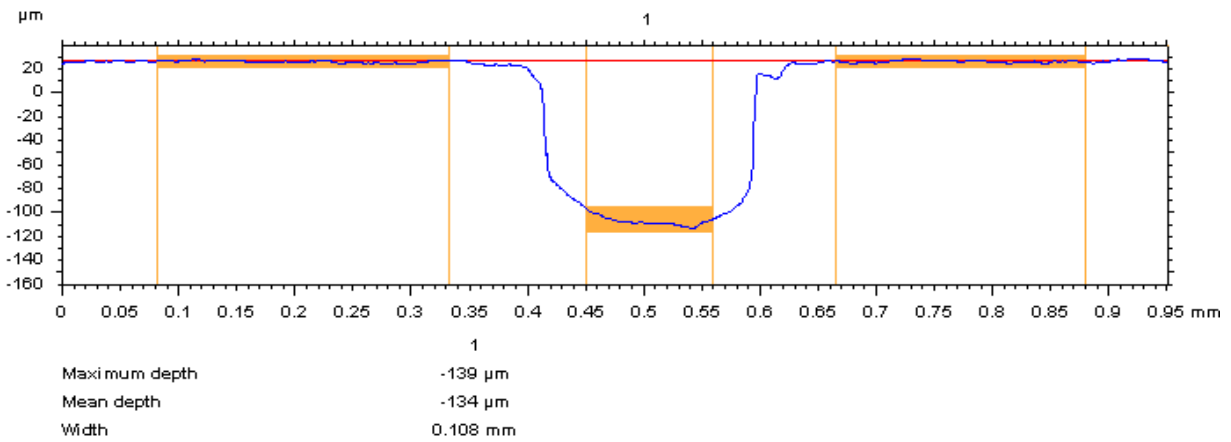


Figure 6 – Glass plate profile

4. Data:

Parameter	Value
Reflective/Diffusive/Transparent/Translucent	Diffusive/Transparent/Reflective
Working Range (mm)	0.7
Precision (μm)	1
Stand Off (mm)	14
Max. Data Rate (Hz)	9K
Lateral Resolution	4
Z Resolution	-
Application Category	-