

## Mechanical Parts Inspection

### Executive Summary

Optimet's ConoProbe MK10 with 25mm and 50mm focal lenses was used in mechanical parts inspection. The tests were performed only to demonstrate measurement capability. Five different samples were supplied; some were scanned using spray and some without spray. In both cases we achieved optimal performance and accurate results.

### 1. Optimet's Advantages over Other Technologies:

1. Unique collinear technology
2. Capability to measure sharp angles in minimum clearance
3. High lateral resolution
4. High sampling rate with no need for averaging

### 2. Application description

Five different mechanical parts were scanned using Optimet's ConoProbe MK10 with 25mm and 50mm focal lenses.

#### Test settings:

Sample	Measurement Rate	X-Step	Y-Step	Laser Power
1	9 kHz	30 $\mu\text{m}$	50 $\mu\text{m}$	45
2	9 kHz	20 $\mu\text{m}$	30 $\mu\text{m}$	35
3	9 kHz	20 $\mu\text{m}$	40 $\mu\text{m}$	40
4	9 kHz	20 $\mu\text{m}$	50 $\mu\text{m}$	28
5	9 kHz	40 $\mu\text{m}$	50 $\mu\text{m}$	10



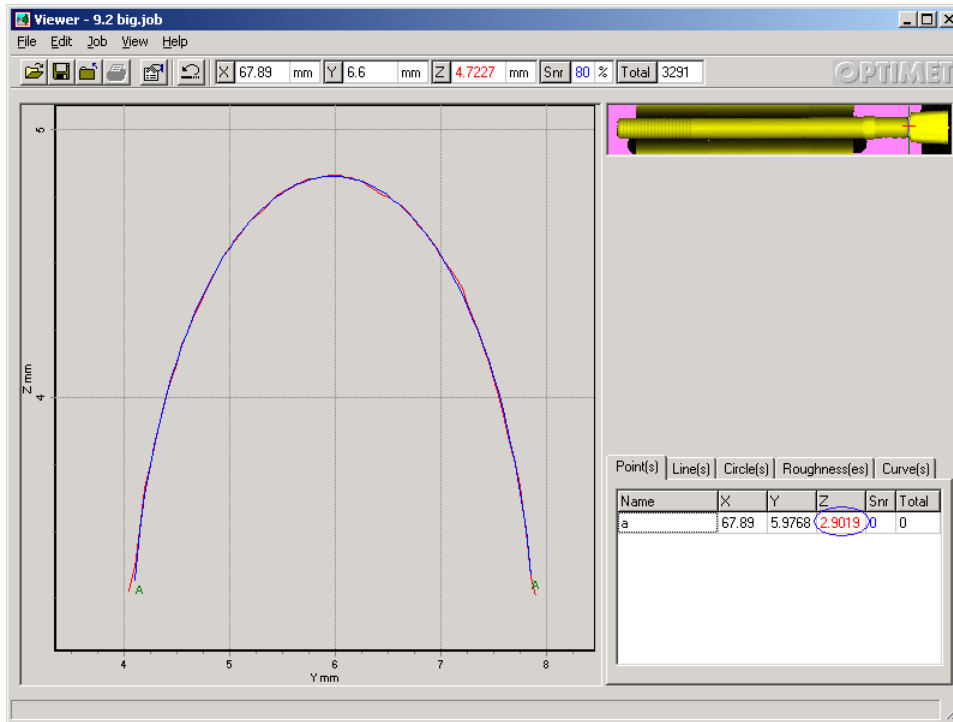
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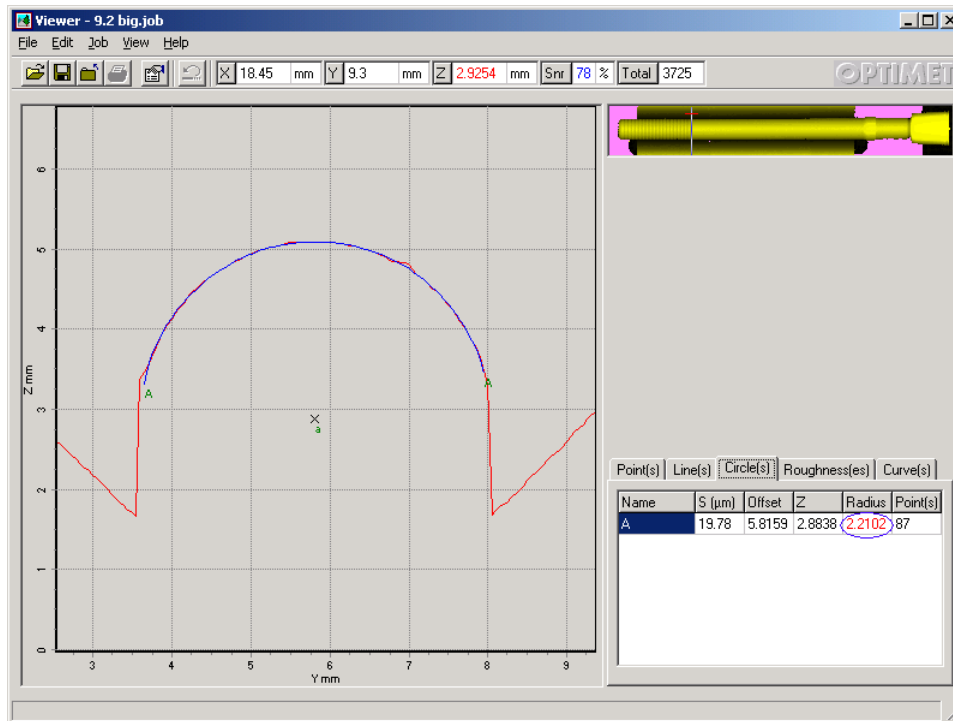
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### 3. Results and Observations

#### Sample 1



**Figure 1** – Y profile of the sample – radius R1



**Figure 2** – Y profile of the sample – radius R2



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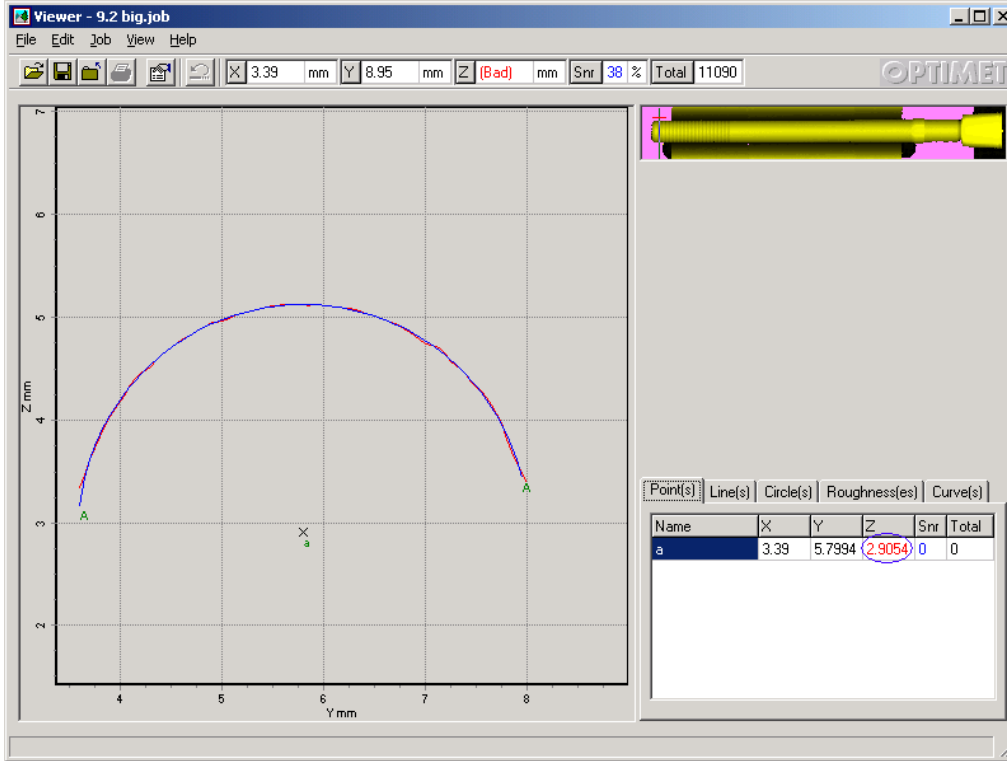


Figure 3 – Y profile of the sample – radius R3

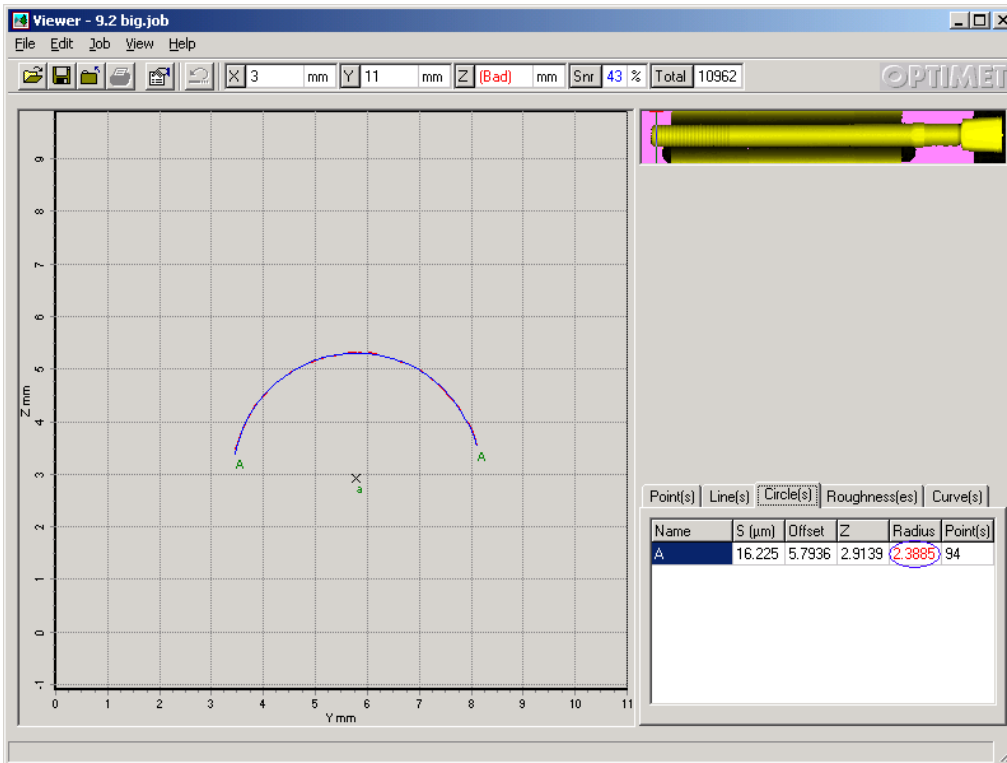


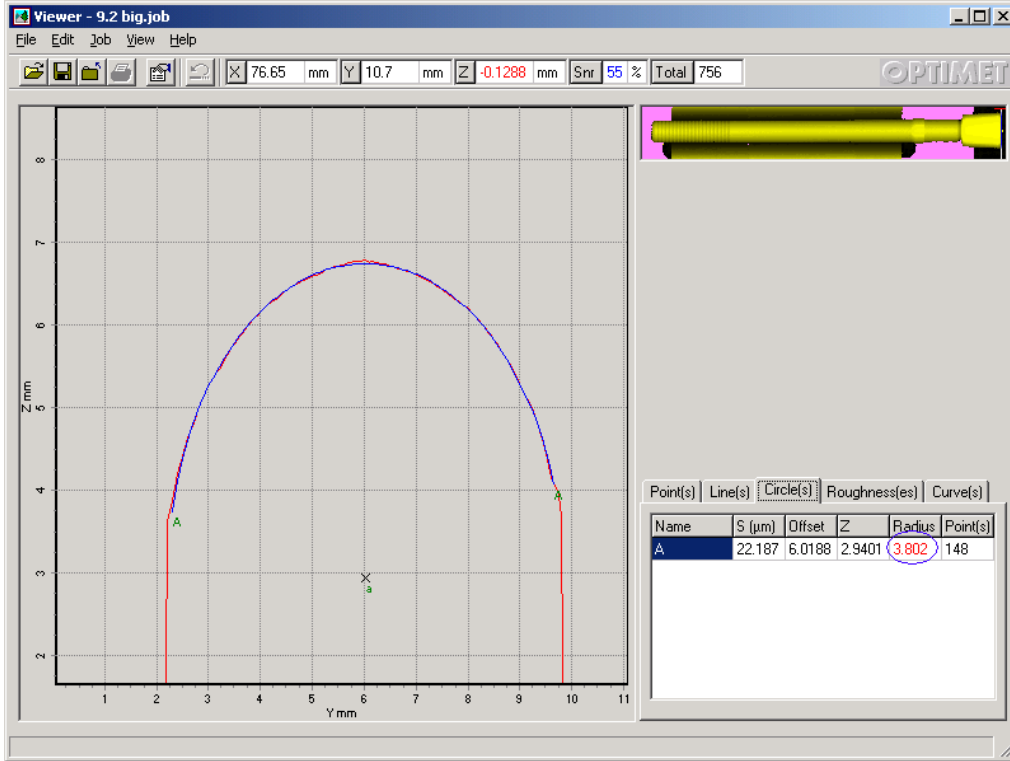
Figure 4 – Y profile of the sample – radius R4



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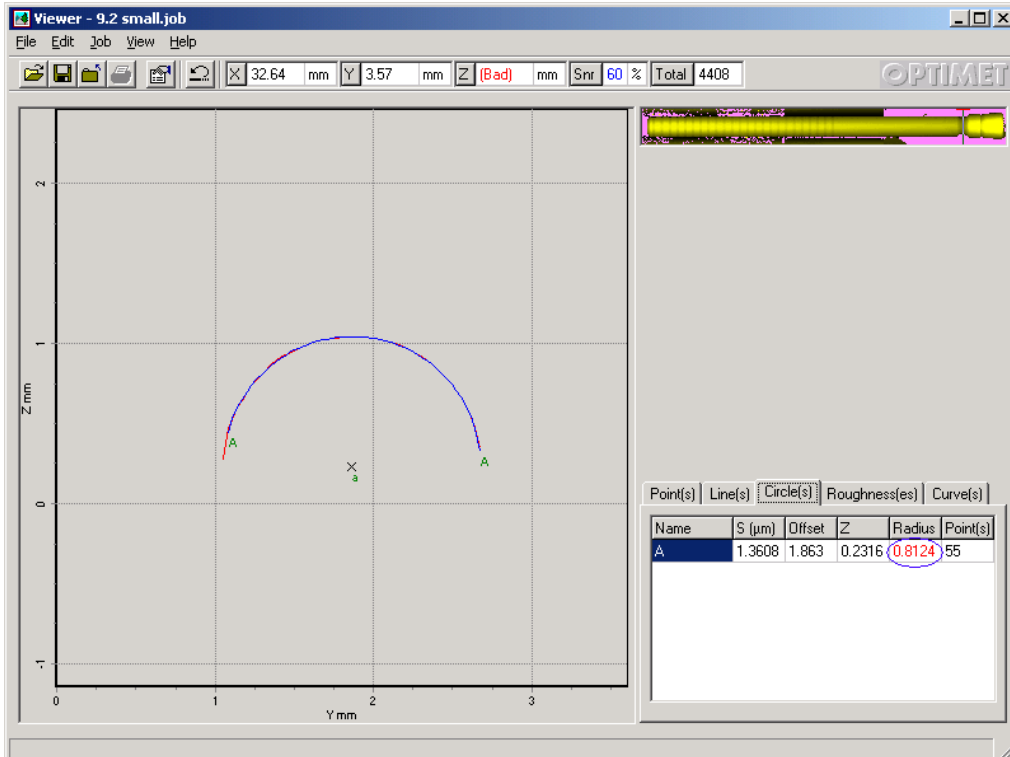
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**Figure 5** – Y profile of the sample – radius R5

## Sample 2



**Figure 6** – Y profile of the sample – radius R1



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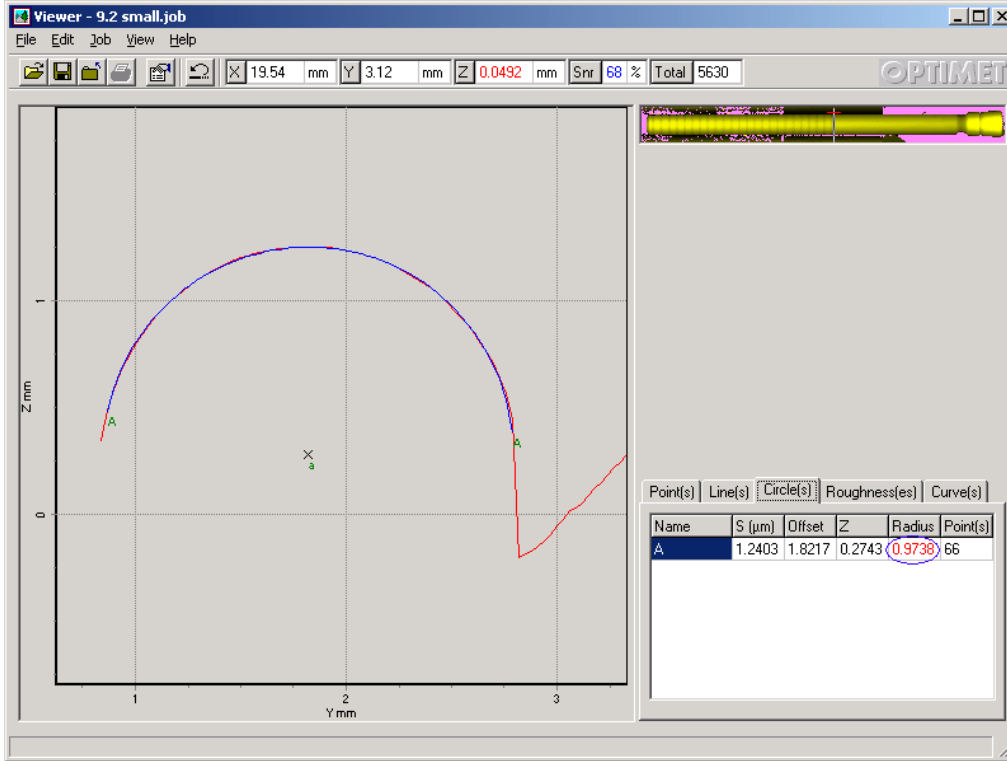


Figure 7 – Y profile of the sample – radius R2

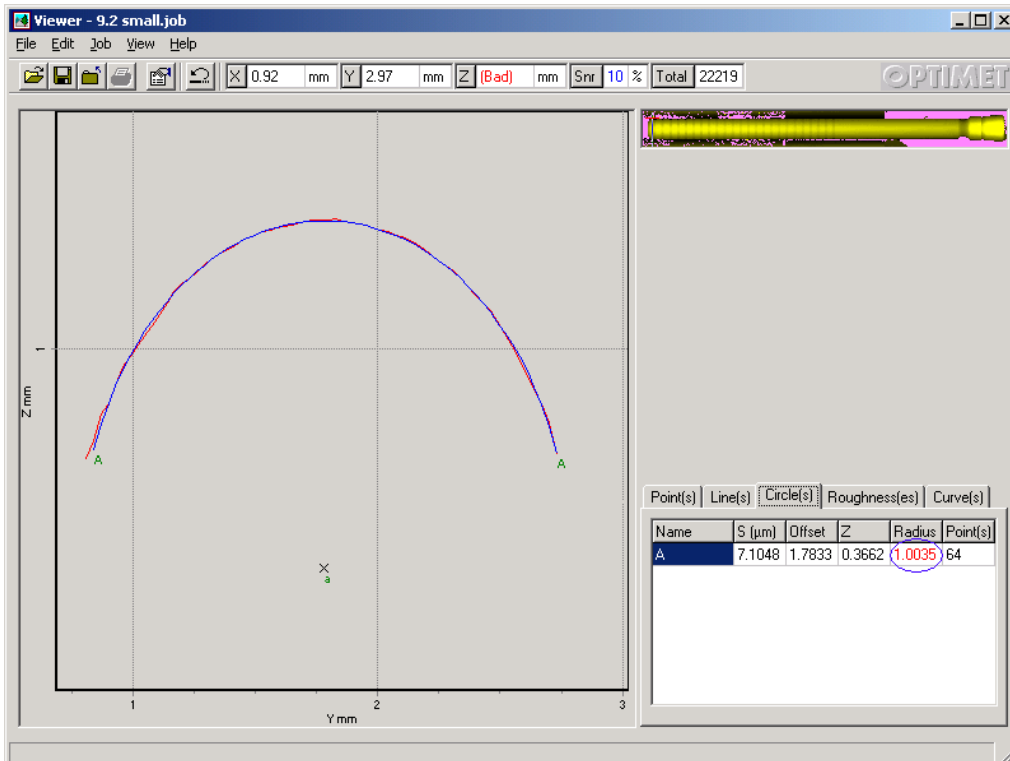


Figure 8 – Y profile of the sample – radius R3



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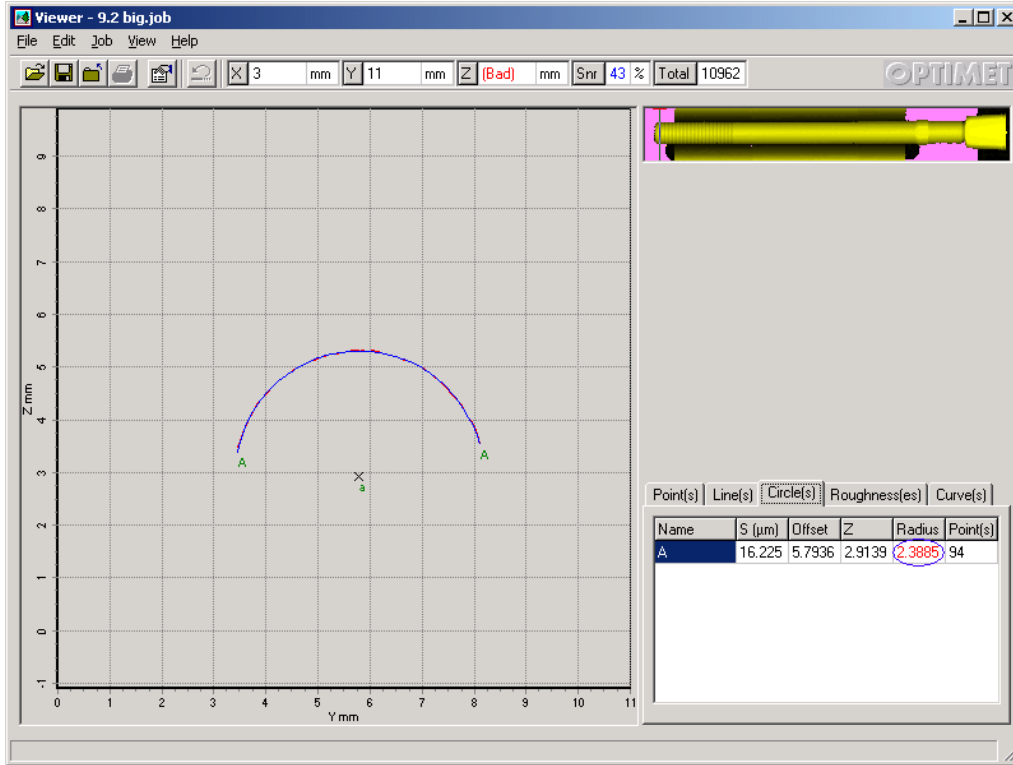


Figure 9 – Y profile of the sample – radius R4

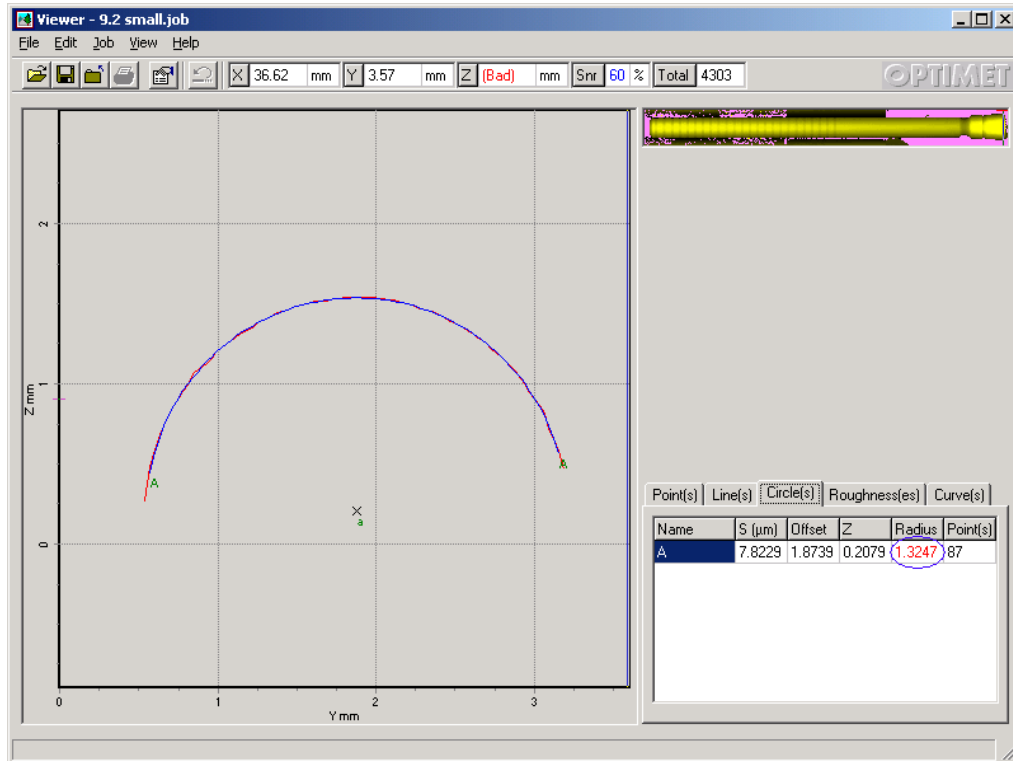


Figure 10 – Y profile of the sample – radius R5



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### Sample 3

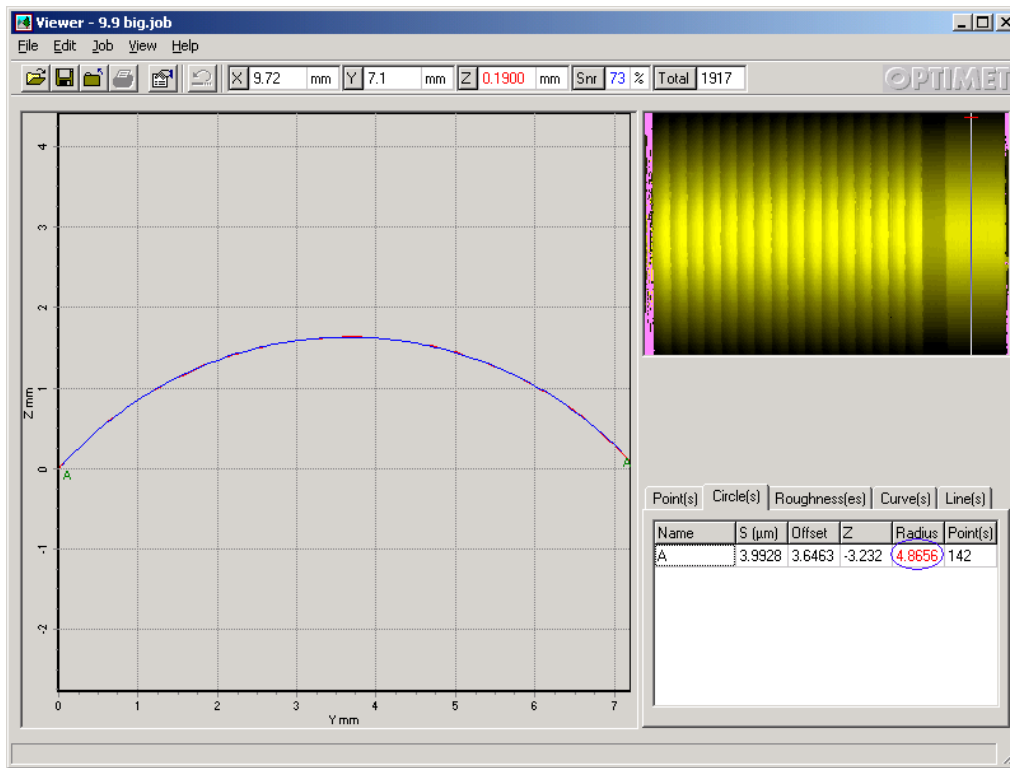


Figure 11 – Y profile of the sample – radius R6

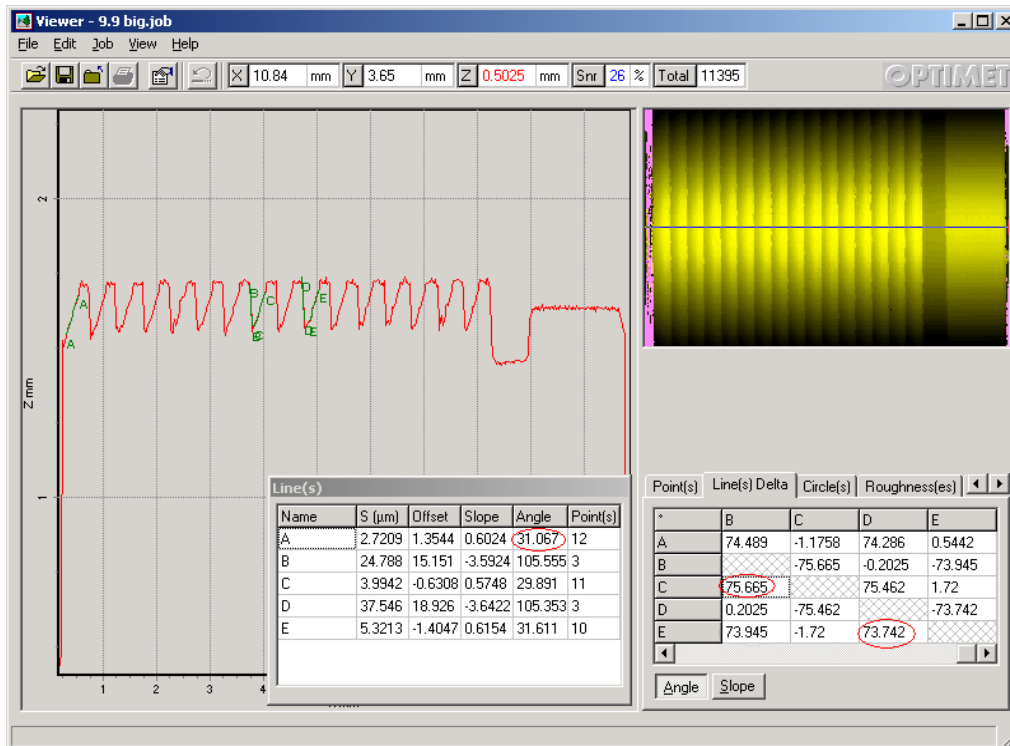


Figure 12 – Y profile of the sample – 3 different angles



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### Sample 4

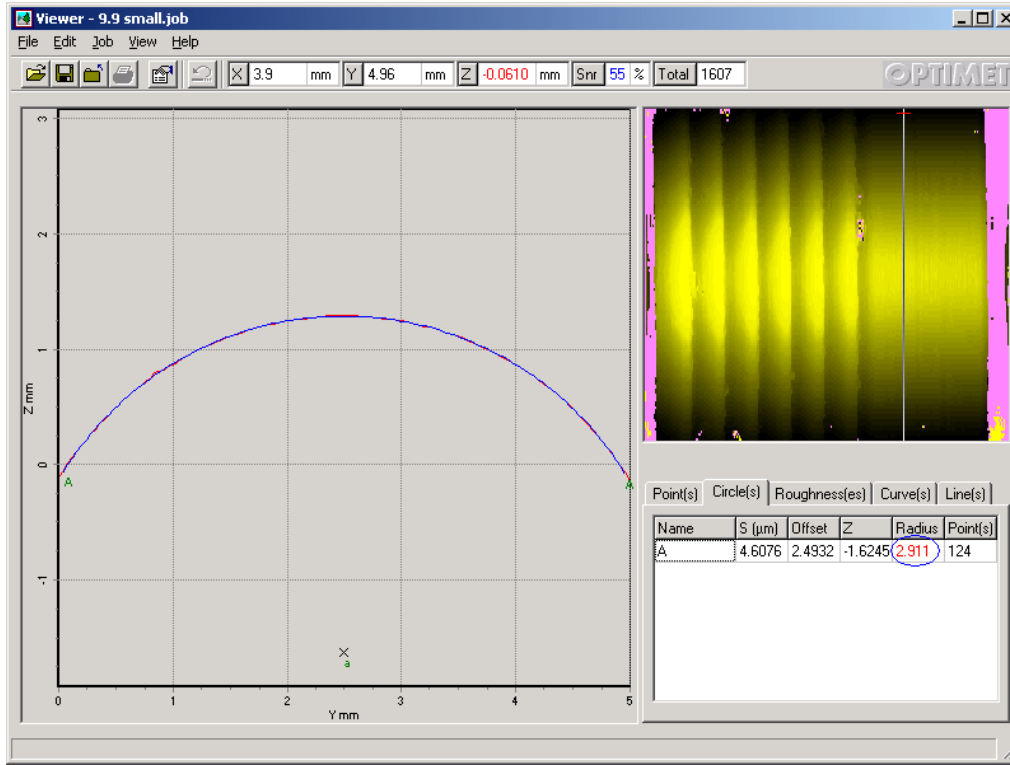


Figure 13 – Y profile of the sample – radius R1

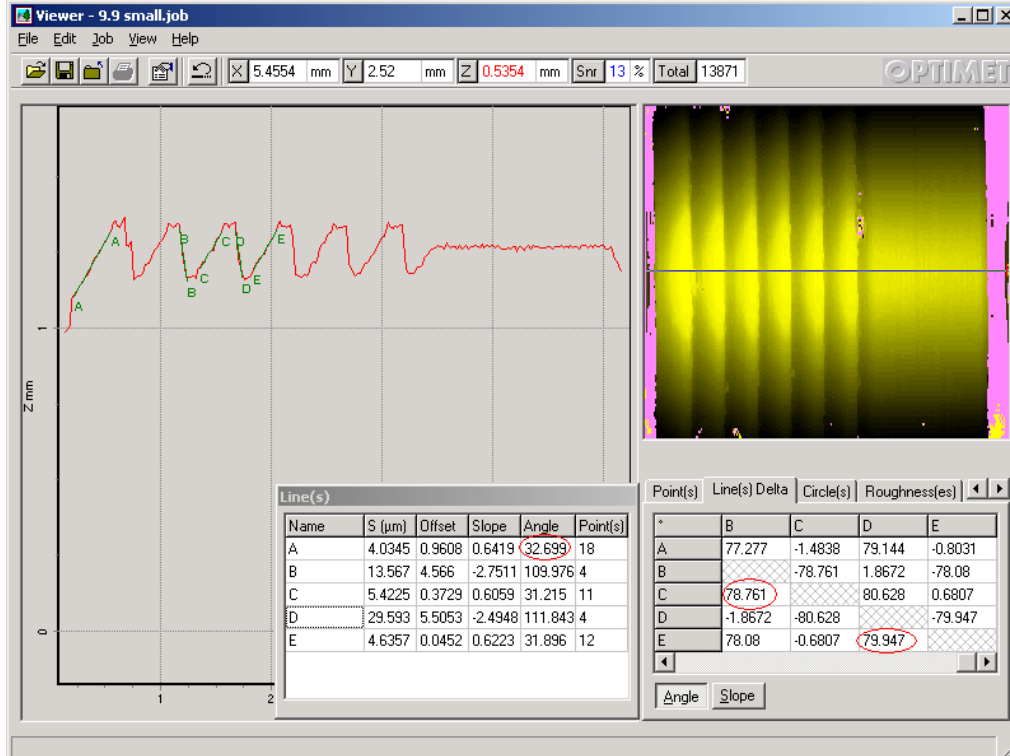


Figure 14 – Y profile of the sample – 3 different angles





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### Sample 5

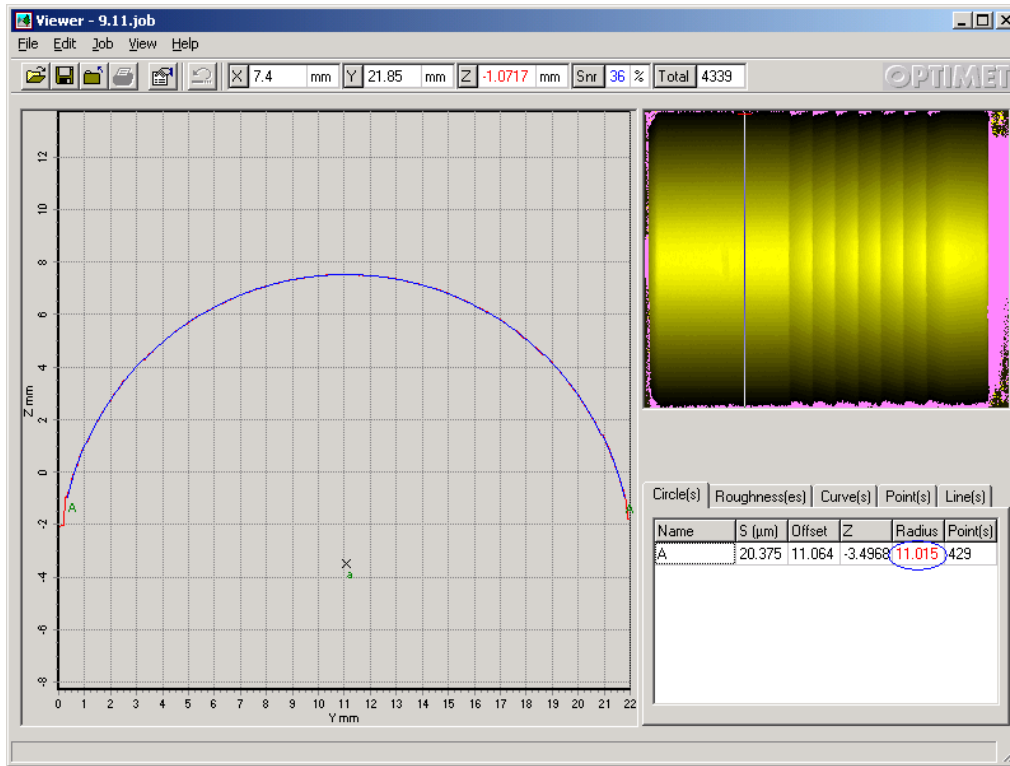


Figure 15 – Y profile of the sample – radius R1

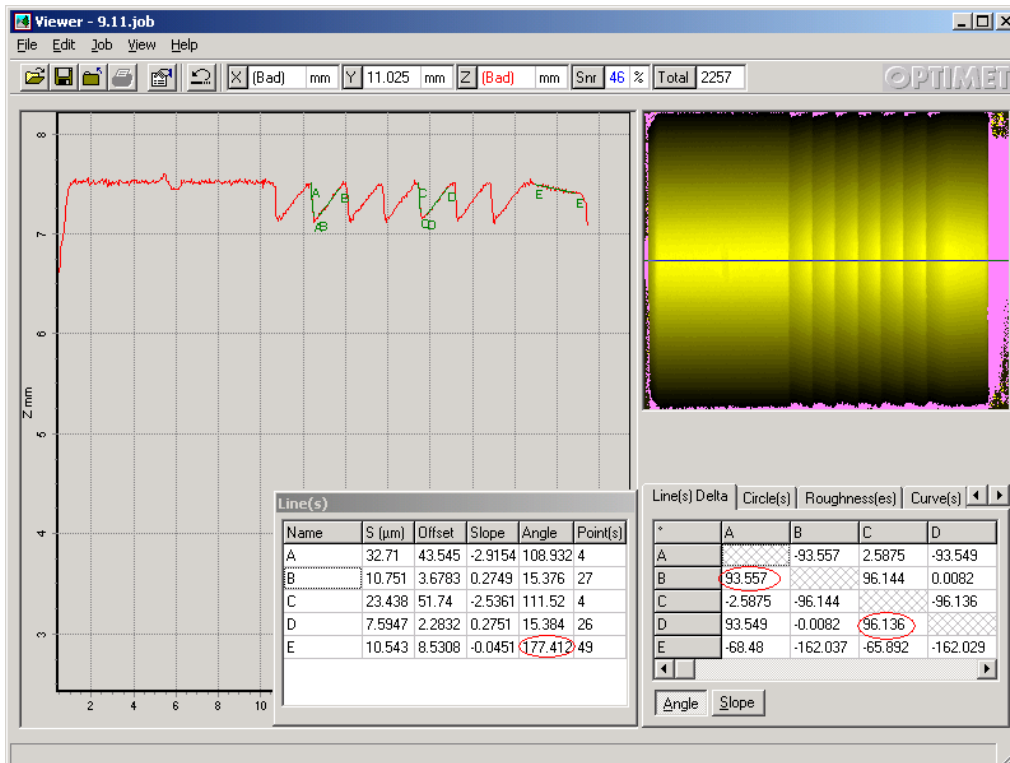


Figure 16 – Y profile of the sample – 3 different angles

#### 4. Data

For 25mm and 50mm focal lenses:

<b>Parameter</b>	<b>Value</b>
Reflective/Diffusive/Transparent/Translucent	Diffusive
Working Range (mm)	1.8/8
Precision ( $\mu\text{m}$ )	3/6
Stand Off (mm)	15/35
Max. Data Rate (Hz)	9K
Lateral Resolution	-
Z Resolution	-
Application Category	-