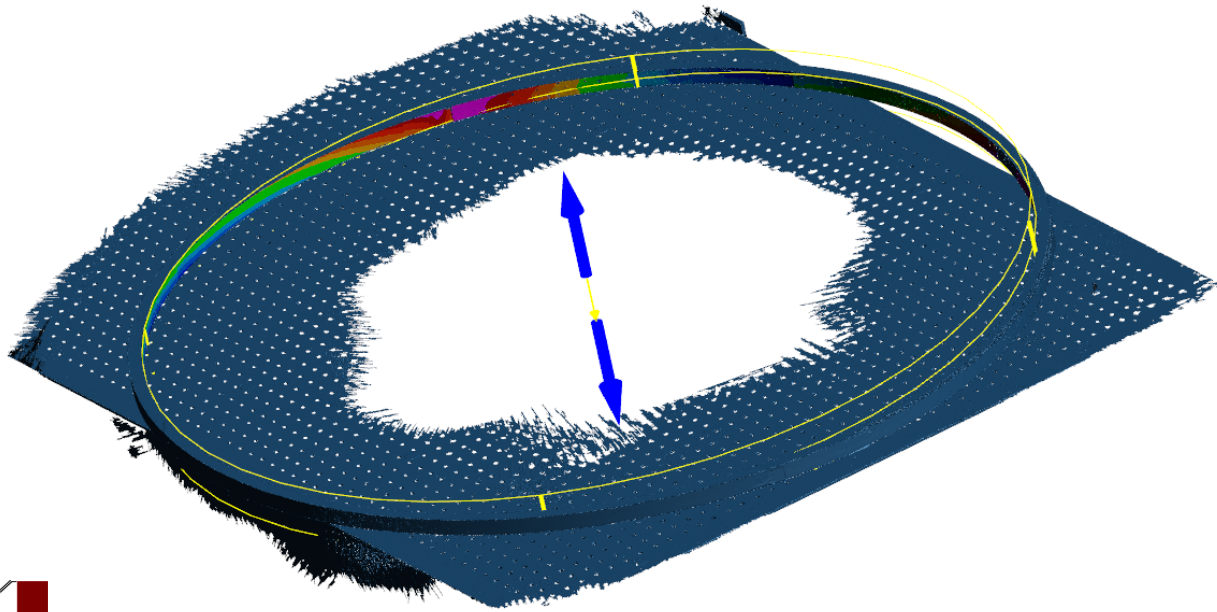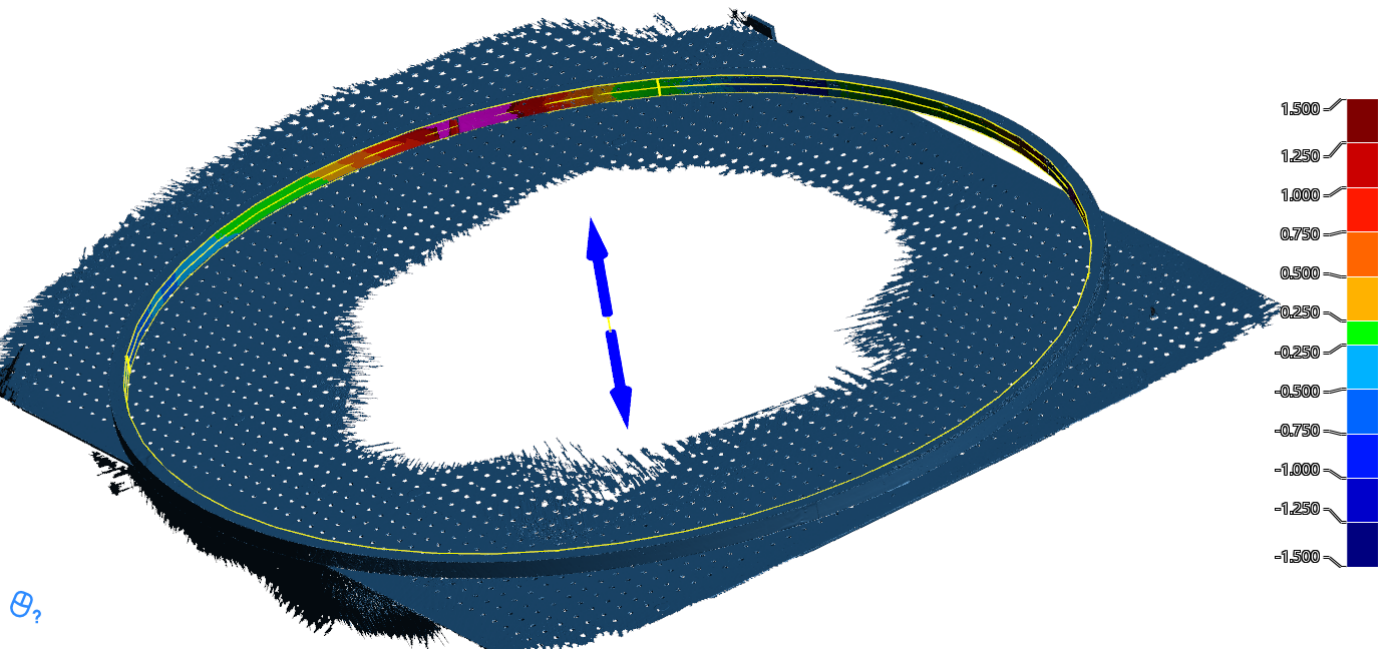# Metrology for pfrich end rings

Simon Snydersmith, Sushrut Karmarkar, Andreas Jung

13 June 2024

- Laser scanned using Metrascan C-Track

- Layed flat on optical table

- Radial measurements were constrained to be axia

- End ring 1 was bonded first, end ring 2 second

Above: best fit cylinder without constraint

Left: best fit cylinder constrained to optical table normal
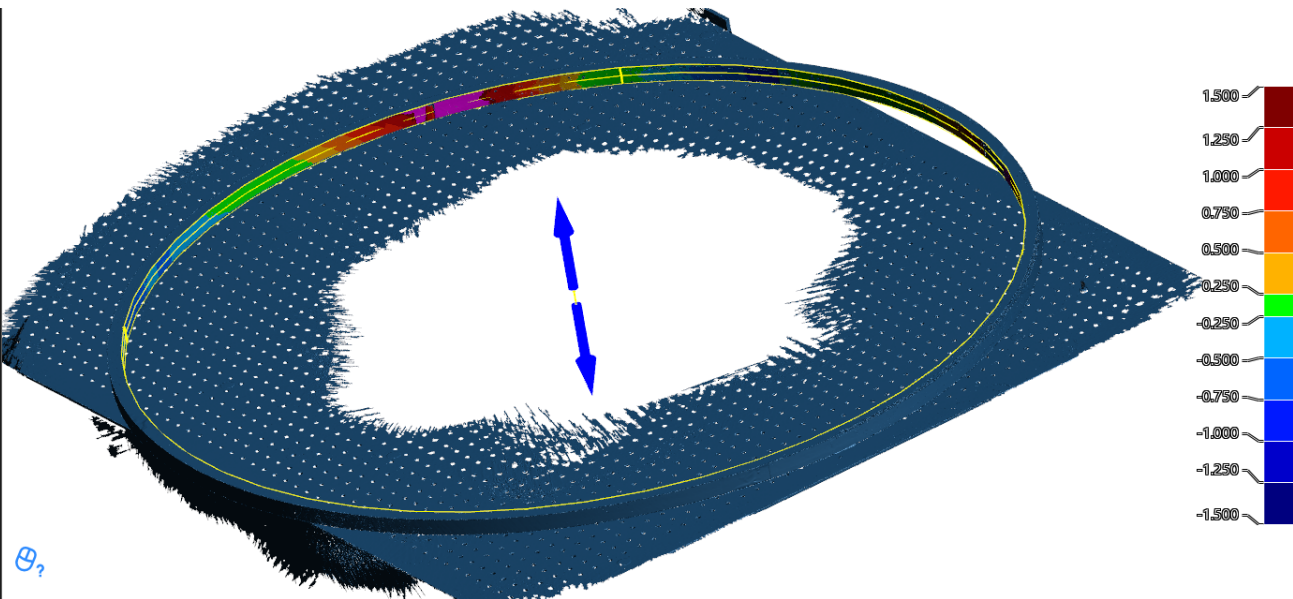
End Ring 1: 630.105 mm
Std. Dev. 0.590 mm
0.167 mm off nominal
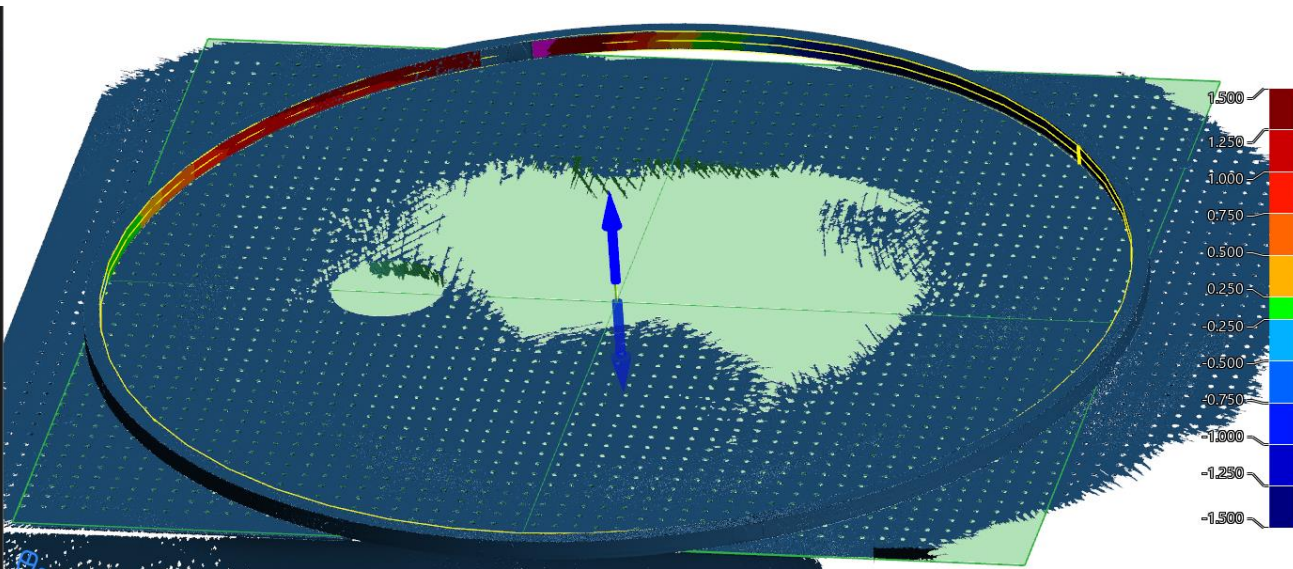
End Ring 2: 629.856
Std. Dev. 1.171 mm
0.416 mm off nominal

3
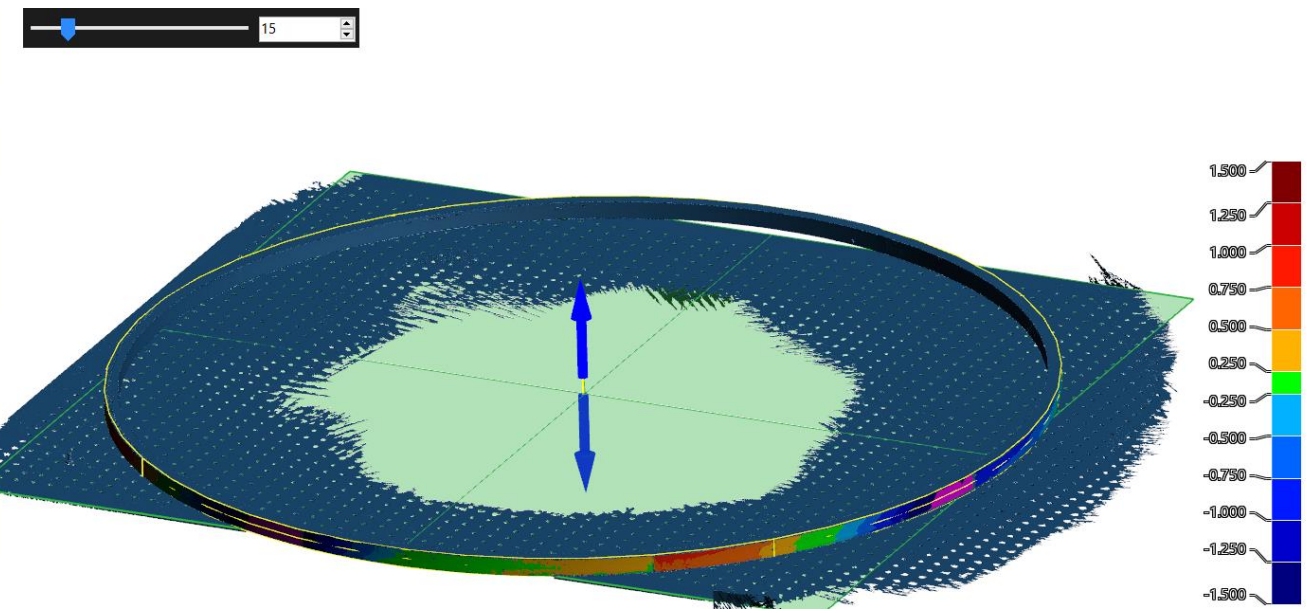
End Ring 1: 649.742 mm
Std. Dev. 0.648 mm
0.420 mm off nominal
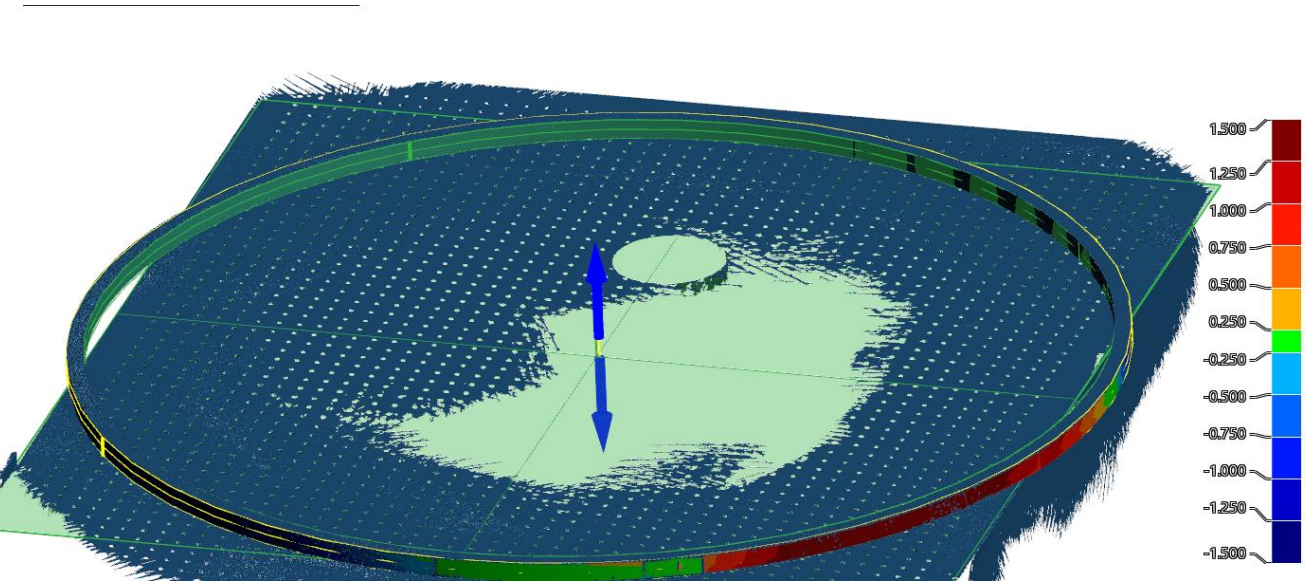
End Ring 2: 649.887
Std. Dev. 1.272 mm
0.565 mm off nominal

4

Flatness measurements

Flatness was measured by comparing the best fit plane of the surface (constrained by optical table normal) to the measure mesh of the surface
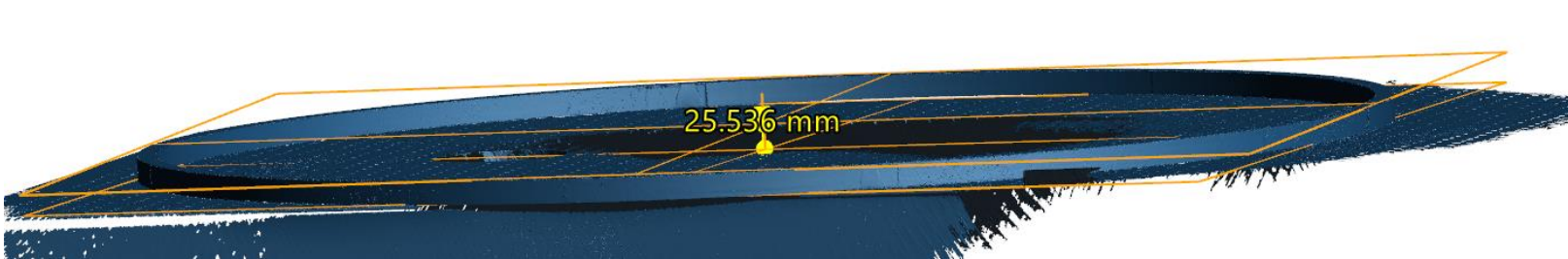

End Ring 2:
Std. Dev. 0.190

End Ring 1:
Std. Dev. 0.362 mm

5

Thickness Measurements 25.4 mm nominal
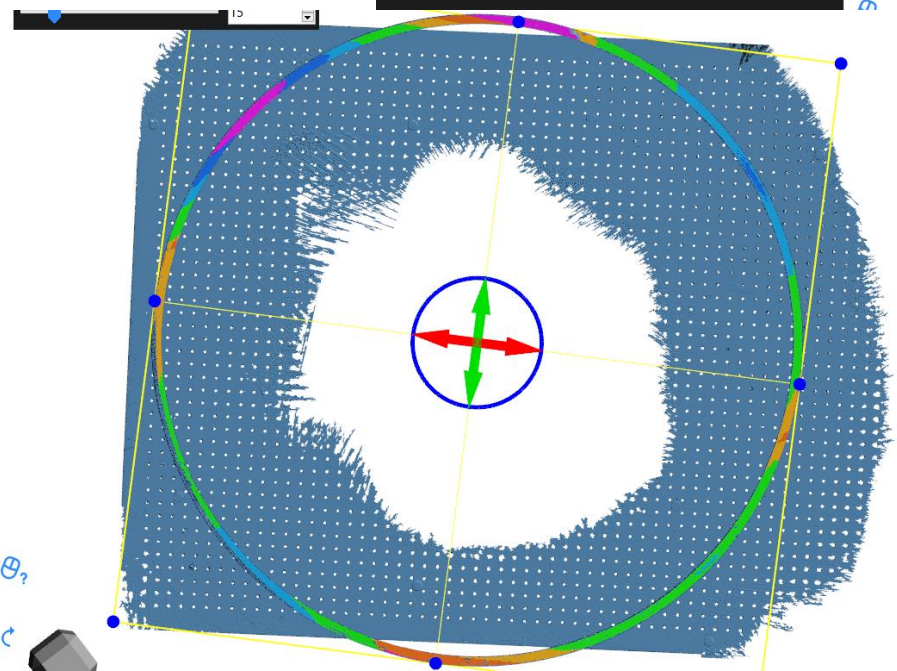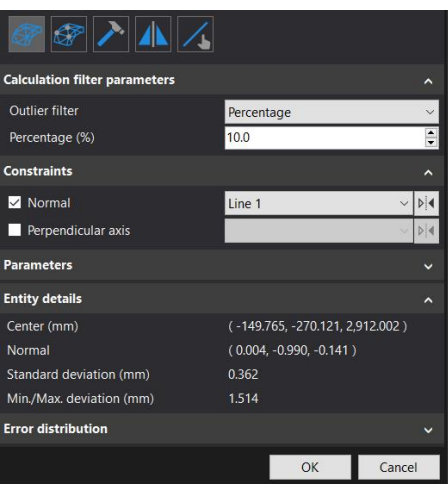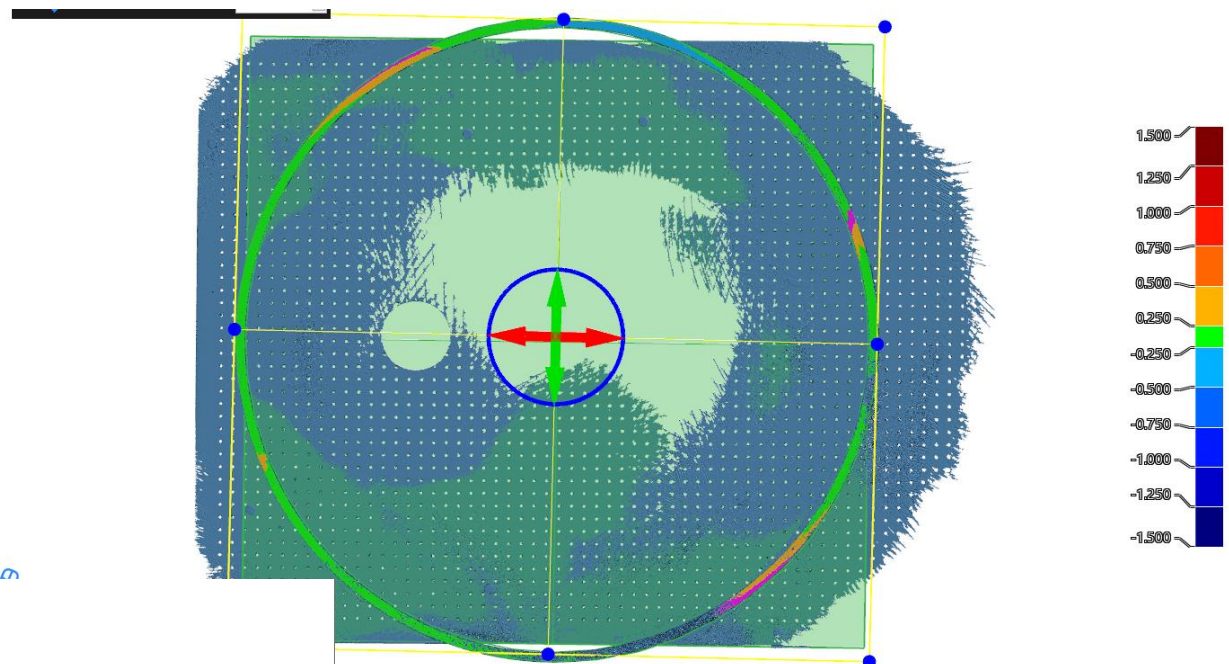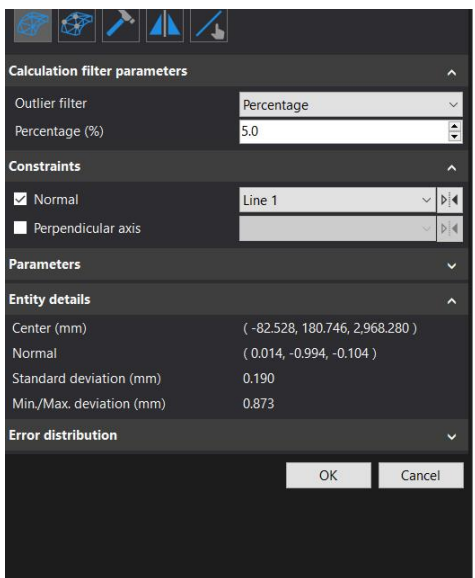
Measured thickness by finding the distance between top surface plane and optical table plane
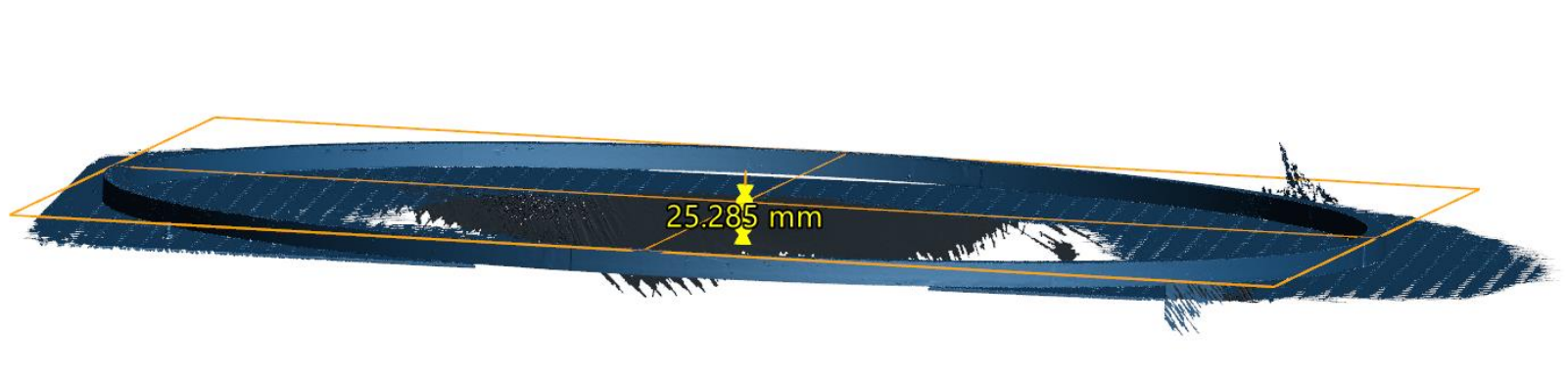
25.285 mm

End Ring 1: 25.285 mm
0.115 mm off nominal

25.536 mm

End Ring 2: 25.536
0.136 mm off nominal

Insert Placement

- Initial insert location measurement of Ring 2 confirms the lack of circularity evident in previous measurements

- Still looking for a good way to analyze the location of insert holes compared to specs