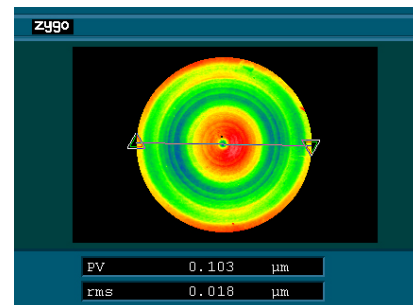
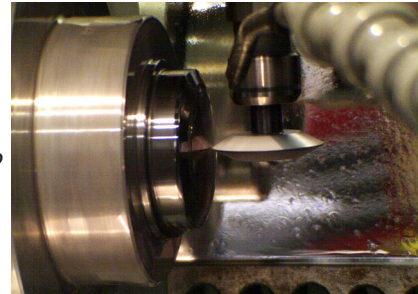




Freeform® L

Part Photo



Goal:

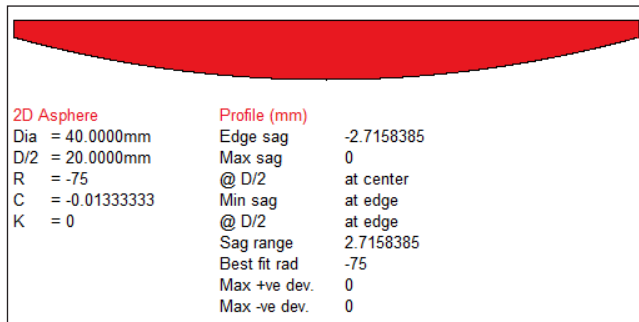
Demonstrate surface finish by vertical grinding on the Freeform® L Ultra Precision Machine platform.

Process:

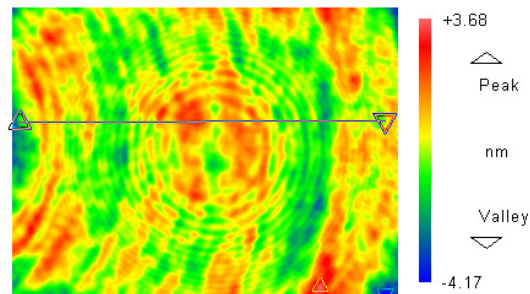
XZ vertical grinding on a Freeform® L using a high speed grinding spindle with Y axis active

Part Details:

- **Material:** High grade binderless tungsten carbide (WC)

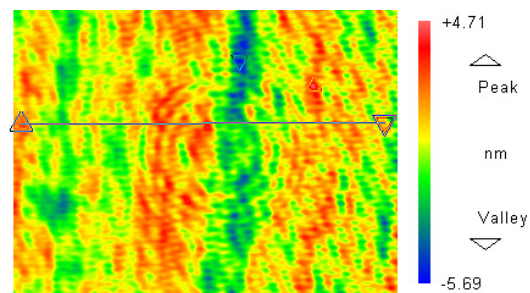


White light interferometer measurements



Finish near center

| | | | | | |
|-----|-------|----|-----------------|------|----|
| PV | 7.854 | nm | Size X | 1.39 | mm |
| rms | 0.972 | nm | Size Y | 1.04 | mm |
| Ra | 0.769 | nm | Spikes Removed: | On | |



Finish near edge

| | | | | | |
|-----|--------|----|-----------------|------|----|
| PV | 10.394 | nm | Size X | 1.39 | mm |
| rms | 1.389 | nm | Size Y | 1.04 | mm |
| Ra | 1.099 | nm | Spikes Removed: | On | |

Process Details:

- **Tool:** Vitrified bond diamond wheel
- **Feed rate:** 0.5 mm/min
- **Coolant:** Odorless mineral spirits (OMS)

Results:

- **Surface finish near center:** 0.77 nm Ra
- **Surface finish near outer edge:** 1.10 nm Ra
- **Form accuracy:** 0.1 μm PV
- **Form accuracy:** 0.02 μm rms