**Goal:**
Demonstrate the capability to manufacture an infrared silicon lens with 15 diffractive zones, meeting surface finish, form accuracy, and absolute radius specifications.

**Process:**
Using a Nanoform® X with an inner enclosure, to contain water-based coolant, or Nanoform® 250 ultra grind, specifically designed for flood coolant applications, to manufacture a multi-zone aspheric diffractive silicon lens.

**Part Details:**
- **Material:** Optical grade silicon
- **Diameter:** 43.0 mm
- **Base radius:** 107.787 mm (± 0.037 mm)
- **Center thickness:** 6.0 mm

**Diffractive Details:**
- **Zones:** 15
- **Zone diameter tolerance:** 0.02 mm
- **Zone depth:** 1.2 µm

**Process Details:**
- **Tool:** 0.2 mm radius, negative rake diamond tool
- **Spindle speed:** 3500 rpm
- **Feed rate:** 2.0 mm/min
- **Depth of cut:** 4.0 µm
- **Coolant:** Water-based

**Results:**
- **Surface finish:** 1.04 nm Ra
- **Form accuracy:** 56.1 nm RMS
- **Fitted base radius:** 107.783 mm