Goal:
Demonstrate the surface finish results achievable with local spiral milling of a brass pin using Levicron’s 80K RPM high speed air-bearing tooling spindle.

Process Step:
- Program using Diffsys lens array utility
- Finish in one pass

Part Details:
- Material: Brass
- Lenslet diameter: 1.8 mm
- Spherical radius: 1.2 mm
- Depth: 0.406 mm
- Mar Slope: 49˚

Process Details:
- Tool: Chardon Tool diamond ball end mill
- Radius: 0.50 mm
- Spindle speed: 80,000 RPM
- Surface speed: 400 mmpm
- Feed rate: 5 micron/rev
- Spiral Pitch: 5 µm
- Coolant: Ordorless Mineral Spirits (OMS)

Results:
- Total process time: 90 sec/lenslet
- Finish: 1.494 nm Ra
  (Gaussian filter, .08 mm)
- Form: 300 nm PV

(taken on Taylor Hobson CCI)