Application:
Spiral milling of a 3 dimensional continuous surface.

Process:
Using 3 axes of contouring motion (X,Z,C) in combination with a high speed milling spindle, flycut a convex optical surface in copper.

Part Configuration:
20mm diameter, 15mm radius, convex, copper part mounted in work holding fixture on the C-axis vacuum chuck

Machining Parameters:
Tooling spindle speed: 10,000 rpm
Work holding spindle speed: 500 rpm
Feed per revolution: 45µm.

Tool Configuration:
0.75mm radius tool on 65mm swing diameter.

Form Accuracy
0.130 µm P/V
(5.2 µ" P/V)

Surface Roughness
4.3nm Ra