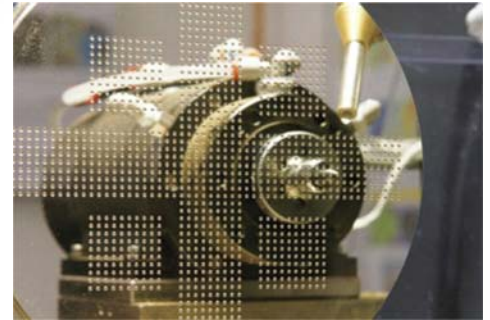


Application Report

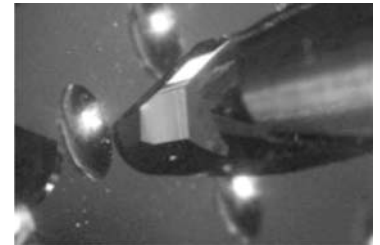
Micro Lens Array Milling



Precitech Feeform 700A



Micro lens array
High speed milling



Application:

Milling a lens array in Electroless Ni mold insert.

Process:

Using 3 axes of contouring motion (X,Z,C or X,Y,Z) in combination with a high speed milling spindle, mill aspheric concave lenses into Ni plated substrate.

Part Configuration:

2mm Diameter with 1mm sagital depth, 3 X 3, aspheric lenslet array on 3mm pitch. The part is held with vacuum on the C-Axis Chuck.

Machining Parameters:

Tooling Spindle Speed: 35,000 rpm

Linear federate: 25mm/min

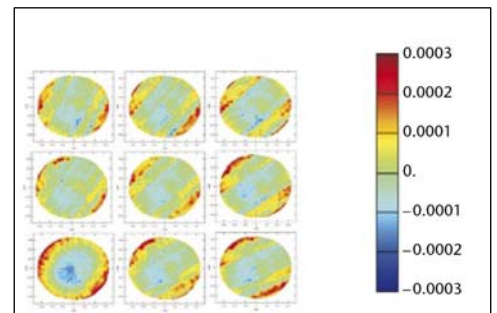
Depth of cut: Variable

Tool Configuration:

0.5mm radius, single flute, diamond, ball, end mill.

Form Accuracy

Deviation of lenslets on position in the array, 0.35μ P/V (14μ " P/V) (graph scale in mm)



Surface Roughness

2.2 nm Ra

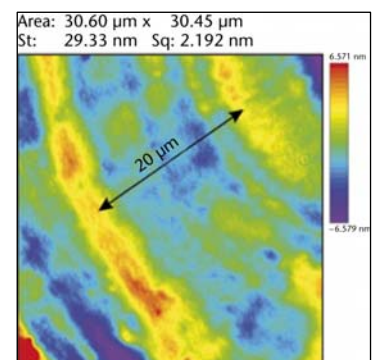


FIGURE 6: Micro roughness of a sample lens measured with white light interferometry; 2.2 nm (rms), kinematic roughness is visible.