

SCRATCH/DIG REFERENCE CHART

Scratch and dig standards were set up by the United States Government to describe the polishing quality of optical surfaces. There are standard samples of each grade for a visible comparison. (These samples can be purchased clear or with mirrored surfaces.) The following are quantitative measurements for these standards.

SCRATCH

SCRATCH #	MAX. WIDTH
80	0.08 mm (0.0031 inch)
60	0.06 mm (0.0024 inch)
40	0.04 mm (0.0016 inch)
20	0.02 mm (0.0008 inch)
10	0.01 mm (0.0004 inch)
5	0.005 mm (0.0002 inch)

The accumulated length of all maximum size scratches shall not exceed 1/4 of the diameter of the clear aperture.

DIGS

DIG #	MAX. DIAMETER
50	0.50 mm (0.020 inch)
40	0.40 mm (0.016 inch)
30	0.30 mm (0.012 inch)
20	0.20 mm (0.008 inch)
10	0.10 mm (0.004 inch)
5	0.05 mm (0.002 inch)

The total sum of the diameters of all the digs shall not be greater than twice the diameter size of the maximum size dig.

Digs smaller than .025 mm, (.001 inches) are not counted.

SOURCE: OPTICS PLUS