



Technical Info

Scratch / Dig Optical Surface Specifications

Purpose:

This document defines surface quality on optical components per MIL-O-13830.

Definitions:

- SCRATCH: Any marking or tearing of the part surface.
• DIG: A small rough spot on the part surface similar to a pit in appearance. A bubble is considered a dig.
• SLEEK SCRATCH: A hairline scratch.
• CRUSH or RUB SCRATCH: A surface scratch or a series of small scratches.

Method:

The size of a defect is to be measured through the use of an optical comparator: Surface quality is to be specified by a number such as 60/40. The first digits relate to the maximum width allowance of a scratch as measured in microns. The next digits indicate to maximum diameter allowance for a dig in hundredths of a millimeter. Thus, as can be seen from the table below, a surface quality callout of 60/40 would permit a scratch width of .06 mm (60 micron -or- 0.0024") and a dig diameter of .40 mm (400 micron -or- 0.0158").

Table with 7 columns: Scratch or Dig Number, Maximum Scratch Width (mm, inch), Maximum Dig or Bubble Diameter (mm, inch), Dig or Bubble Separation Distance (mm, inch). Rows include values for 120, 80, 60, 50, 40, 30, 20, 15, 10, 5, and 3.

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