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Cosmetic Surface Quality

Specification Standards

All Melles Griot optics are referenced to MIL-O-13830A standards. These standards include scratches, digs, grayness, edge chips, and cemented interfaces. It is important to note that inspection of polished optical surfaces for scratches is accomplished by visual comparison to scratch standards. Thus, it is not the actual width of the scratch that is ascertained, but the appearance of the scratch as compared to these standards. A part is rejected if any scratches exceed the maximum size allowed. Digs, on the other hand, specified by actual defect size, can be measured quantitatively.

Because of the subjective nature of this examination, it is critical to use trained inspectors who operate under standardized conditions in order to achieve consistent results. Melles Griot optics are compared by experienced quality assurance personnel using scratch and dig standards according to U.S. military drawing C7641866 Rev L. Additionally, our inspection areas are equipped with lighting that meets the specific requirements of MIL-O-13830A.

The scratch-and-dig designation for a component or assembly is specified by two numbers. The first defines allowable maximum scratch visibility, and the second refers to allowable maximum dig diameter, separated by a hyphen; for example,

- 80-50 represents a commonly acceptable cosmetic standard.
- 60-40 represents an acceptable standard for most scientific research applications.
- 10-5 represents a precise standard for very demanding laser applications.

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