

Optics Standards News

US will adopt ISO 10110

The first two parts of the new American National Standard for optics drawings, OP1.110, are already in final draft form, and will be voted on at the standards meetings at OptiFab. This new standard is practically identical to the existing international drawing standard, ISO 10110.

Since their publication in 1996, the ISO drawing standards have been controversial, especially in the United States. The international standards were drafted based on the German Industry Standards (DIN 3140) with minimal consideration for the active U.S. Military drawing standards such as MIL-PRF-13830B, MIL-G-174B or MIL-STD-34. Thus the ISO standards are a significant departure from standard practice in the United States and many other countries. In spite of this, the ISO standards have been gaining momentum and support throughout the industry, and have been adopted as the national optics drawing standards in many countries including Japan, Germany, France, and Russia, among others.

In most countries, adoption of the international standards is a matter of translation. In Germany for instance, the national drawing standard, DIN ISO 10110, is a German translation of ISO 10110, with no changes to the technical content. As a result, the ISO numbering convention can be used. If a country wishes to deviate at all from the content of the international standard, a new numbering system must be used.

The new American National Standard for drawings, OP1.110, will be structured in parts mirroring those of ISO 10110. A translation table is shown in figure 1.

ISO Standard	OP equivalent	Subject
ISO 10110-1	OP 1.110-1	Drawing notation, general
ISO 10110-2 thru 4	OP 3.001	Glass tolerances
ISO 10110-5 and ISO 10110-14	OP 1.110-5 OP 1.110-14	Surface wavefront, transmitted wavefront
ISO 10110-6	OP 1.110-6	Centering
ISO 10110-7	OP 1.002	Surface imperfections
ISO 10110-8	OP 1.110-8	Surface texture
ISO 10110-9	OP 1.110-9	Coatings
ISO 10110-10	OP 1.110-10	Tabular notation
ISO 10110-11	Under review	Defaults
ISO 10110-12	OP 1.110-12	Aspheric notation
ISO 10110-17	Under review	Laser Damage

By releasing the standard under a new numbering system, or a MOD edition, the American standard can be changed to suit the American optics industry. For example, OP1.110 will allow the use of Military

standards as well as other national standards such as OP1.002, especially in the areas of glass specification and surface imperfections; this is prohibited in ISO 10110. Other changes, such as the use of a decimal point instead of decimal comma, or the default wavelength of 632.8 nm, instead of 546.17 nm, should facilitate their introduction into the American optics industry. By the end of next year, the Optics and Electro-Optics Standards Council expects to have the entire suite of standards released and available for use.

If you are interested in learning more about the new standard, or to participate in optics standards efforts, check out the [OEOSC website](#), or contact Gene Kohlenberg (gene.kohlenberg@optstd.org).