BALLOT RESULTS

Letter Ballot: OEOSC/OP
Ballot No.: 2013-1 Adoption of OP1.0110-9, -11, and OP1.9211-1, -2 and -3
Issued: January 19, 2013
Date Due: February 28, 2013

OEOSC ASC OP, Committee for Optics and Electro-Optical Instruments

Number of voting members: **42**
Number of ballots required: **21**
Number of ballots received: **23**

Title: BSR/OEOSC OP1.0110-12, Proposed American National Standard for Optics and Electro-Optical Instruments – Preparation of drawing for optical elements and systems – Part 12: Aspheric Surfaces

Question: Do you approve the adoption of BSR/OEOSC OP1.0110-12 as an American National Standard?

22 Affirmative Comments, if any :

I'm not thrilled with this standard, but it is an improvement over the current one (so would that make the vote "grudgingly affirmative"?). There are a few corrections/clarifications I'd like to see, and some notes as well.

Use of an A2 coefficient: The A2 term alters the vertex and best-fit radii of an asphere, sometimes drastically so. I'd like to see a note to that effect somewhere. Really I'd like to see designers stop using it for anything but nominally plano aspheres, but as I am not a designer by trade I suppose there may be some use for A2 terms.

ANS Note 4: The variables are not entirely consistent and could lead to confusion. I quote from Greg: "The radius in the 'basic equation' for Qbfs is the same as Rbfs in the power series. {*Clarifying note from me: one is labeled 'R' while the other is labeled 'Rbfs'*} I think all the cbfs and Rbfs stuff should just be dropped while just using c and R, or even just use c throughout. (The equation for cbfs is used when converting to Qbfs from some other specification, but is not needed when working with Qbfs itself. Perhaps a comment could be made to point out that axial curvature is 1/R for Qcon but not for Qbfs but I don't think that's needed.)"

The form of Qbfs that includes a conic term is absent. It is a very small modification, and it would be good to allow designers to use it when appropriate.

Along that same vein, it would be nice to see some guidance as to what the features and weaknesses of the various forms are. If it doesn't belong in the notes for the standard, where should such information be put? Do we need to write a journal article to spell it all out?

Some diagrams of the surfaces would be helpful. The examples are nice, but are of course confined to "official" drawings. More "cartoon" like diagrams would help

visualization for the surfaces, especially in the future when we try to make distinctions for so-called “freeforms”.

A conversion equation for a/b/c coefficients in the implicit surface equation to the radius and conic constants would be useful (I’ve derived one before…). I have occasionally seen prints that write a conic in the implicit form (e.g. an ellipsoid), but most fabrication and testing software don’t support this form (maybe some design software too, I’m not familiar enough with it). On a side note, how does the standard allow for tolerancing a/b/c coefficients?

Remove Keith Snyder, Change Howland to NGC Electronic Systems and primary

RiYo LLC should me marked as an active participant. On page 15 there is a missed "track change" that should be accepted.

0 Negative w/reasons:

1 Abstain w/reasons: We do not possess sufficient competency in this subject area

Result: **Pass, but resolve comments from QED. If substantive changes are required, the standard will need to be re-balloted.**
