

Draft Minutes
 ASC OP/TF 3 Optics and Electro-Optical Instruments – Optical Elements and Assemblies – Wavefront Standard
 Sunday, June 13, 2010
 8:30 a.m. – 5:00 p.m.
 Snow King Resort, Timberline 2
 400 E. Snow King Ave.
 Jackson, WY 83001

Attending		
<input checked="" type="checkbox"/>	Committee Members (5 of 18 w/1 alt.)	Representing (Parent Organization)
<input type="checkbox"/>	David Aikens	Savvy Optics Corp.
<input type="checkbox"/>	Gordon Boulton (Alternate)	JDSU
<input type="checkbox"/>	David Corridon	Individual
<input type="checkbox"/>	Walter Czajkowski	APOMA (Edmund Optics)
<input checked="" type="checkbox"/>	Jessica DeGroote Nelson (Alternate)	Optimax Systems, Inc.
<input type="checkbox"/>	Marla Dowell	IEEE/LEOS
<input type="checkbox"/>	Marla Dowell	NIST
<input type="checkbox"/>	Lincoln Endelman	SPIE (Endelman Enterprises)
<input checked="" type="checkbox"/>	Chris Evans	Zygo Corporation
<input type="checkbox"/>	Krishna Gupta (Alternate)	Zygo Corporation
<input type="checkbox"/>	Guttman	Photon, Inc.
<input type="checkbox"/>	Donna Howland	Northrop Grumman Aerospace Systems
<input type="checkbox"/>	Hal Johnson	Harold Johnson Optical Lab
<input type="checkbox"/>	Allen Krisiloff	Triptar Lens Company, Inc.
<input checked="" type="checkbox"/>	Mike Mandina (Alternate)	Optimax Systems, Inc.
<input type="checkbox"/>	Stephen Martinek	4D Technology
<input type="checkbox"/>	Wayne McKinney (Alternate)	Lawrence Berkeley National Lab
<input type="checkbox"/>	Rick Plympton	Optimax Systems, Inc.
<input type="checkbox"/>	Bob Smythe	R. A. Smythe, LLC
<input checked="" type="checkbox"/>	Piotr Szwaykowski	Engineering Synthesis Design
<input checked="" type="checkbox"/>	Peter Z. Takacs	Brookhaven National Lab
<input type="checkbox"/>	Ray Williamson	Ray Williamson Consulting
<input type="checkbox"/>	Dr. Valeriy V. Yashchuk	Lawrence Berkeley National Lab
	Observers (2)	
<input type="checkbox"/>	Lahsen Assoufid	Argonne National Laboratory
<input checked="" type="checkbox"/>	Gene Kohlenberg	OEOSC
<input checked="" type="checkbox"/>	Paul Murphy	QED Technologies

1. Welcome and Introductions

C. Evans opened the meeting at 9:15 a.m. The phone conference system reported an error each time that the meeting phone was used to call into the conference system. So the meeting progressed without the phone conference system.

2. Adoption of Agenda

J. DeGroote Nelson moved to adopt the draft agenda. P. Takacs seconded the motion, which carried unanimously.

3. Approval of draft minutes of the January 24, 2010 meeting

P. Takacs moved that the draft minutes be accepted; J. DeGroote Nelson seconded the motion; the motion carried unanimously.

4. Wavefront Standards

- a) **Both Documents:** There was a suggestion that the titles should be modified to give a clear description of content and differentiation between them

b) **OP1.004 Review of Action Items from Previous Meeting**

C. Evans is adding a second note in the uncertainty clause 4.11.

C. Evans has created a flow diagram. He will look at ISO 10110-5 to check components of the flow chart.

He believes that after adding some suggested changes to the draft it will be ready for balloting by mid-summer.

M. Mandina discussed several observations concerning the draft. In clause 3.5 ITF is missing (instrument transfer function).

C. Evans said he is disinclined to include ITF.

In clause 3.5 the phrase “from the theoretical surface” was added and C. Evans will add a definition of the “theoretical surface” if it isn't already defined.

In clause 3.6 how is best fit asphere defined? A solution could be to add “per drawing...”,

In Note 2-- how is piston defined?

In clause 4.6.3, the Note is copy of one above and should be changed.

It was suggested that In clause 4.7 a different letter should be picked because the current letter looks like it is referencing Bessel functions. It was suggested to add x and y versions of the equation.

In clause 4.12 “give” should be “given”.

C. Evans said that R. Williamson had e-mailed comments concerning OP1.004

The Task Force to a break at 10:47 am until 11:00 am

c) **OP1.005 Review of Action Items from Previous Meeting**

P. Murphy asked how this standard relates to what goes on the drawing. This document defines how to do the measurements called on the print.

P. Murphy said that there is a lack of ITF or STF, and some practical guidance should be included.

P. Murphy: noted that filtering Notes 5.2.2 and 3.2.8: include hard filters where as many use soft filters. Is it advisable to require hard filters? J. Degroote Nelson said that whatever is in the canned software programs is what will be used. P. Takacs said that this is in spatial domain. P. Murphy will provide some data sets to show filter problems.

P. Murphy said that there are practical considerations: 1D PSDs, not 2D PSDs. He drew an example to show why 1D is not advisable. M. Mandina said that it should not be a problem with broad pitch polishing, but would be an issue with small pad polishing.

C. Evans proposed that P. Takacs and P Murphy resolve this issue before the next meeting.

5. Action Items

a) **Op1.004: Minor changes agreed:**

- Use a and c (eg a(2,0), a02 and c(2,0), c02) for edge normalized and orthonormal Zernike polynomial coefficients respectively (C. Evans)
 - Provide flow chart to G. Kohlenberg as GIF (C. Evans) for inclusion as Appendix; add reference to new appendix in body text (C. Evans)
 - Move rescale before fit to appropriate polynomials in flow chart and incorporate minor changes discussed at the meeting(C. Evans)
 - Define default projection (to a base plane) (C. Evans)
 - State “best fit asphere per print” (C. Evans)
 - Define default removal of best fit sphere from aspherics (C. Evans)
 - Correct note to 4.6.3 (C. Evans)
 - Correct 4.5.4 (C. Evans)
 - Provide specific equations for slope X and slope Y and eliminate confusing use of J (C. Evans)
 - Update notation section per D. Aikens e-mail (C. Evans)
 - Review corrections suggestions by R. Williamson and incorporate changes as needed(C. Evans)
 - Review corrections suggestions by D. Aikens to notation section and incorporate changes as needed(C. Evans)
- On completion of items 1-12, revised document to TF3 ballot (C. Evans/ G. Kohlenberg)

b) OP1.005 Action Items from 6/13/2010 meeting

- Need separate Glossary of Terms. (P. Takacs)
- Change Table of Contents to 2-level. (P. Takacs)
- Cross check this document with ISO 10110-8 to make sure notations agree and no contradictions exist. (D. Aikens)
- Check Sec. 4 slope notation for consistency. Decide on symbol for slope: Δ or M or something else. Need to coordinate with TC213 Surface Texture nomenclature if possible. (P. Takacs, D. Aikens)
- Add a section 5.X to discuss instrument transfer function effects as possible problems in interpreting measurement results between instruments. (P. Takacs, P. Murphy)
- Add section on how to deal with statistics of non-isotropic surfaces, i.e. surfaces with a definite “lay” direction.
- Investigate possible problems with the hard-edge frequency filters to see if they create problems in inverse transformations of filtered profiles. (P. Murphy, P. Takacs)

6. Time and Place for next OP/TF 3 Wavefront Meeting

J. Degroote moved that the next meeting be held in Rochester, NY in October; M. Mandina seconded the motion, which carried unanimously.

7. Adjournment

J Degroote Nelson moved that the meeting be adjourned. P. Takacs seconded the motion. The meeting was adjourned at 12:35 p.m.