ANSI Z80.28-2004
(Editorially revised March 2006)

AMERICAN NATIONAL STANDARD

ANSI Z80.28-2004

for Ophthalmics -

Methods for Reporting Optical Aberrations of Eyes

ANSI®
Z80.28-2004

American National Standard
for Ophthalmics –

Methods for Reporting Optical Aberrations of Eyes

Secretariat

Optical Laboratories Association

Approved May 14, 2004
Editorially Revised March 9, 2006

American National Standards Institute, Inc.

American National Standard

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Developed by

The Accredited Committee Z80 for Ophthalmic Standards -

Optical Laboratories Association
Z80 Secretariat
P. O. Box 2000
Merrifield, VA 22116-2000

Published by

Optical Laboratories Association
P. O. Box 2000
Merrifield, VA 22116-2000

Printed in the United States of America

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Foreword (This foreword is not part of American National Standard ANSI Z80.28-2004.)

This American National Standard was developed to address the expressed needs of those members of the ophthalmic community who measure the optical aberrations of the human eye in clinical and research settings and use these measurements to correct those aberrations, those who manufacture instruments to measure the optical aberrations of the human eye and those who teach others in the use of aberration information collected by wavefront refractors and other devices, such as corneal topographers. In particular there was a need for standardization of terms and definitions used in the field, for standardization of methods for describing the aberrations of the eye and transmitting this information to others and for standardization of methods for graphically presenting this information in a clinically useful way.

The experts who worked together to create this standard did not feel that, at the present time, there was sufficient consensus within the ophthalmic community to standardize the advanced metrics that fully utilize the additional information available when the aberrations of the eye beyond common sphero-cylindrical errors are measured. These advanced metrics will undoubtedly utilize the concepts of the point spread function of the eye, the optical transfer function and the modulation transfer function of the eye. It is hoped that such metrics may be included in future revisions of this standard.

This standard does not address the instruments that measure the optical aberrations of the eye.

This standard was created by a special working group created by the Z80 Subcommittee on Ophthalmic Instruments and included experts in the field of measurement and assessment of the aberrations of the human eye from the clinical, manufacturing and academic areas of the ophthalmic community.

This standard contains six informative references, all of which are not considered part of this standard.

Suggestions for improvement of this standard will be welcome. They should be sent to the Optical Laboratories Association, P.O. Box 2000, Merrifield, VA 22116-2000.

This standard was processed and approved for submittal to ANSI by the Accredited Standards Committee on Ophthalmic Optics, Z80. Committee approval of this standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the Z80 Committee had the following members:

Thomas C. White, M.D., Chairman
Quido Cappelli, Vice-Chairman
Robert Rosenberg, O.D., Secretary

Organization Represented	*Name of Representative*
AR Council	Scott Rickert
	Lee K. Anderson (Alt.)
	Mark Imus (Alt.)
	Don Quinn (Alt.)
Advance Medical Technologies Association	Douglas J. Fortunato
	Carolyn Jones (Alt.)
	Glenn Davies (Alt.)
	Stanley J. Rogaski (Alt.)
American Academy of Optometry	David S. Loshin

Organization Represented	*Name of Representative*
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	Gerhard Cibis (Alt.)
	Keith Baratz (Alt.)
	Paul F.Vinger (Alt.)
American Optometric Association	Donald Pitts
	William J. Benjamin (Alt.)
	Robert Rosenberg (Alt.)
	Jeffrey Weaver (Alt.)
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National Academy of Opticianry	James Elkin
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Optical Laboratories Association	Daniel Torge[illegible]
	Henry A. H[illegible]t (Alt
Optical Society of America	Richard A. P[illegible]ilips
Opticians Association of America	J. Frank Adkins
Prevent Blindness	Ca[illegible]a Hilton
	Jeff [illegible]ud (Alt.)
Sunglass Association of America	Thomas Loomis
	[illegible]enneth L. Frederick (Alt.)
	James Pritts (Alt.)
	Rick Van Arnam (Alt.)
US Leader to ISO TC 172/SC7	Charles E. Campbell
Veterans Administration	John Townsend
	Sharon R. Atkin (Alt.)
Vision Council of America	Kenneth O. Wood
	Kory Brockman (Alt)
	Steve Drake (Alt.)
	Neil Roche (Alt.)
	Dick Whitney (Alt.)

The Working Group for Methods for Reporting Optical Aberrations of Eyes, which falls under the Instrument Subcommittee, had the following members who worked on the writing of this standard:

Charles E. Campbell, WG Chair

David Loshin, Subcommittee Chair

Raymond A. Applegate
Larry Horowitz
Scott MacRea
Daniel Neal
James Schwiegerling
Larry Thibos
Robert Webb
David Williams

American National Standard
for Ophthalmics –

Methods for Reporting Optical Aberrations of Eyes

1. Scope

This standard specifies standardized methods for reporting the optical aberrations of eyes.

2. Normative reference

The following standard contain provisions which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below.

ISO 8429: 1986, *Optics and optical instruments – Ophthalmology – Graduated Dial Scale*

3. Symbols and definitions

Symbols used in this standard are summarized in Table 1.