

AMERICAN NATIONAL STANDARD



*for Ophthalmics -
Focimeters*

ANSI®
Z80.17-2008
(Revision of
ANSI Z80.17-2001)

American National Standard
for Ophthalmics –

Focimeters

Secretariat

Optical Laboratories Association (until December 31, 2008)

The Vision Council (after January 1, 2009)

Approved July 16, 2008

American National Standards Institute, Inc.

American National Standard

Approval of an American National Standard requires review by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgement of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made towards their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretations should be addressed to the secretariat or sponsor whose name appears on the title page of this standard.

CAUTION NOTICE: This American National Standard may be revised or withdrawn at any time. The procedures of the American National Standards Institute require that action be taken periodically to reaffirm, revise, or withdraw this standard. Purchasers of American National Standards may receive current information on all standards by calling or writing the American National Standards Institute.

Developed by

The Accredited Committee Z80 for Ophthalmic Standards -

Optical Laboratories Association
Z80 Secretariat
11096 Lee Highway
A101
Fairfax, VA 22030-5039

Published by

Optical Laboratories Association
11096 Lee Highway
A101
Fairfax, VA 22030-5039

Copyright © 2008 by Optical Laboratories Association
All rights reserved.

No part of this publication may be reproduced in any form, in an electronic retrieval system or otherwise, without prior written permission of the publisher.

Printed in the United States of America

Contents

	Page
Foreword	ii
1 Scope	1
2 Normative References.....	1
3 Definitions.....	1
4 Design requirements and recommendations for general purpose focimeters.	4
5 Accuracy Requirements	6
6 Testing.....	9
7 Design requirements and recommendations for test lenses	12
Tables	
1 Tolerances of measured vertex power for continuously indicating instruments.....	7
2 Tolerances of measured prismatic power for continuously indicating instruments.....	7
3 Permissible deviations of measured vertex power reading from the nominal value of the test lenses for digitally rounding instruments	8
4 Permissible deviations of measured prismatic power reading from the nominal value of the test lenses for digitally rounding instruments	8
5 Cylinder power and cylinder axis requirements for focimeters that measure sphere, cylinder and axis simultaneously	9
6 Tolerance on repeatability of cylinder axis measurements for 0.25 D cylinder (degrees)	9
7 Design range for the standard test lenses.....	13
8 Tolerances for spherical test lenses	13
9 Tolerances for prismatic test lenses	14
Figures	
1 Permissible movement of the adjusting rail.....	5
2 Example of a lens support for spectacle lenses in cross section	6
3 Test lens for verifying cylinder power and cylinder axis requirements for focimeters that measure sphere, cylinder and axis simultaneously.....	15
Annex	
A Manufacture of test lenses for focimeters.....	16

Foreword (This foreword is not part of American National Standard ANSI Z80.17-2008.)

This standard was developed by a group of experts under the direction of the ANSI Instrument subcommittee chair, William L. Brown, O.D., Ph.D. This standard defines the requirement for devices that measure the sphere and cylindrical vertex power, prismatic power and axis for spectacle and contact lenses. Accuracy requirements for tolerances or deviation of readings are also defined.

In this revised standard, the definition of vertex, previously omitted from Z80.17, has been added and defined so that it applies not only to lenses for which the optic axis is the prism reference point (i.e., no prism), but also for lenses with prism for which the classical definition of vertex (i.e., the point at which the optic axis intersects a surface) does not apply. Definitions of vertex powers have been revised accordingly. Definitions of IOA and FOA vertex powers and repeatability requirements for cylinder axis measurements for small power cylinder powers are added.

Suggestions for improvement of this standard will be welcome. Prior to December 31, 2008, any comments should be sent to the Optical Laboratories Association, P.O. Box 200, Merrifield, VA 22116-2000. After January 1, 2009, comments should be sent to The Vision Council, 1700 Diagonal Road, Suite 500, Alexandria, VA 22314.

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 White, M.D., Chairman
Quido Cappelli, Vice-Chairman
Robert Rosenberg, O.D., Secretary
Daniel Torgersen, Secretariat

<i>Organization Represented</i>	<i>Name of Representative</i>
Advance Medical Technologies Association	Douglas J. Fortunato Glenn Davies (Alt.) Bernie Liebler (Alt.) Richard Courtney (Alt.)
American Academy of Ophthalmology	Thomas C. White Gerhard Cibis (Alt.) Norman Lanphear (Alt.) Paul F. Vinger (Alt.)
American Academy of Optometry.....	David S. Loshin
American Ceramic Society	Lyle Rubin Herbert Hoover (Alt.)
American Glaucoma Society	Steven J. Gedde Douglas J. Rhee (Alt.)
American Optometric Association	William L. Brown William J. Benjamin (Alt.) Robert Rosenberg (Alt.) Jeffrey Weaver (Alt.)
American Society of Cataract and Refractive Surgery	Stephen Klyce Jack T. Holladay (Alt.) Stephen H. Johnson (Alt.)
Contact Lens Institute.....	Tom Henteleff Peter Mathers (Alt.)
Contact Lens Manufacturers Association	Quido Cappelli Jan Suochak (Alt.)
Department of Veterans Affairs	John Townsend Sharon R. Atkin (Alt.)
Federated Cornea Societies.....	Michael W. Belin David Glasser (Alt.)

<i>Organization Represented</i>	<i>Name of Representative</i>
Food & Drug Administration	Donald Calogero Robert Landry (Alt.) Bruce Drum (Alt.) Robert H. James (Alt.) Dexiu Shi (Alt.)
National Association of Optometrists & Opticians	Franklin D. Rozak Joe Dezenzo (Alt.)
Optical Laboratories Association	Daniel Torgersen Gregory S. Jacobs (Alt.) Susie Leshner (Alt.) Jonathan Schwartz (Alt.)
Optical Society of America	(Representation Vacant)
Opticians Association of America	Tom Hicks Catherine Langley (Alt.)
Prevent Blindness	Christine Bradley Jeff Todd (Alt.)
Sunglass Association of America	Kenneth L. Frederick Scott Macguffie (Alt.) Rick Van Arnam (Alt.)
US Leader to ISO TC 172/SC7	Charles E. Campbell
Vision Council of America	Jeff Endres Ken Wood (Alt.) Steve Drake (Alt.) Neil Roche (Alt.) Dick Whitney (Alt.)

The subcommittee on Ophthalmic Instruments, which developed this standard, had the following members:

William L. Brown, O. D., Ph.D, Chairman	Charles E. Campbell Robert Landry David Loshin Robert Rosenberg Daniel Torgersen Tom White
---	---

