AMERICAN NATIONAL STANDARD

# *for Ophthalmics -*
# *Focimeters*

ANSI Z80.17-2008

**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.**

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## Contents

## 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 ro 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:

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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 |
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| | Tom White |

American National Standard
for Ophthalmics –

# Focimeters

## 1. Scope

This standard specifies requirements for continuously indicating and digitally rounding focimeters with which the vertex powers and prismatic powers of spherical and astigmatic lenses, including lenses mounted in frames, can be measured and with which lenses can be oriented and marked.

## 2. Normative references

The following standard contains provisions which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were 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 editions of the standards indicated below.

ANSI Z80.1-2005, *Ophthalmics – Prescription Ophthalmic Lenses - Recommendations*
ISO 8429:1986, *Optics and optical instruments – Ophthalmology – Graduated Dial Scale*

## 3. Definitions

For the purposes of this standard, the following definitions apply.

**3.1. adjusting rail:** Movable rail or bar used as the reference axis for spectacles during measurement, which is aligned to be perpendicular to the optical axis of the focimeter and parallel to the axis direction of 0° to 180°. This is also called the lens table or frame rest.

**3.2. astigmatic power lens:** Lens bringing a paraxial pencil of parallel rays to two separate line foci mutually at right angles and hence, unlike a spherical lens, having two principal powers.

One of these powers may be zero, with the corresponding focal line at infinity. Lenses referred to as toric lenses, sphero-cylindrical lenses and cylinder lenses are all astigmatic lenses.