American National Standard

for Ophthalmics –
Focimeters

ANSI Z80.17-2013 (R2023)

Approved American National Standard
ANSI

ANSI®
Z80.17-2013 (R2023)
(Reaffirmation of
ANSI Z80.17-2013)

American National Standard
for Ophthalmics –

Focimeters

Secretariat

The Vision Council

Approved March 14, 2013
Reaffirmed June 13, 2018
Reaffirmed October 19, 2023

American National Standards Institute, Inc.

American National Standard

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Developed by

The Accredited Committee Z80 for Ophthalmic Standards -

The Vision Council
Z80 Secretariat
225 Reinekers Lane, Suite 700
Alexandria, VA 22314

Published by

The Vision Council
225 Reinekers Lane, Suite 700
Alexandria, VA 22314

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Printed in the United States of America

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Foreword (This foreword is not part of American National Standard ANSI Z80.17-2013 (R2023).)

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, a method is added for checking the cylinder power and cylinder axis requirements for focimeters that measure sphere, cylinder and axis simultaneously.

Suggestions for improvement of this standard will be welcome. Comments should be sent to The Vision Council, 225 Reinekers Lane, Suite 700, 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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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.