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National Standards Authority of Ireland

IRISH STANDARD

**I.S. EN 167:2002**

ICS 13.340.20

# PERSONAL EYE-PROTECTION - OPTICAL TEST METHODS

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# EUROPEAN STANDARD
# NORME EUROPÉENNE
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English version

## Personal eye-protection - Optical test methods

Protection individuelle de l'oeil - Méthodes d'essais optiques

Persönlicher Augenschutz - Optische Prüfverfahren

This European Standard was approved by CEN on 3 September 2001.

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# Foreword

This document has been prepared by Technical Committee CEN /TC 85, "Eye-protective equipment", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2002, and conflicting national standards shall be withdrawn at the latest by May 2002.

This European Standard replaces EN 167:1995.

This document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), see informative annex ZA, which is an integral part of this document.

Annex A is normative. The annexes B and ZA are informative.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

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# 1 Scope

This European Standard specifies optical test methods for eye-protectors, the requirements for which are contained in other ENs.

Alternative methods may be used if shown to be equivalent.

Non-optical test methods are given in EN 168.

Specifications are given in EN 166.

A definition of terms is given in EN 165.

# 2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text, and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 165, *Personal eye-protection — Vocabulary.*

EN 166, *Personal eye-protection — Specifications.*

EN 168, *Personal eye-protection — Non-optical test methods.*

# 3 Test for spherical, astigmatic and prismatic refractive powers

NOTE The reference methods for assessment of refractive power are contained in 3.1 and 3.2.

If during measurement using the telescope a doubling or other aberration of the image is observed then the ocular may either be classified as a defective, or subjected to further examination using the method described in annex A.

## 3.1 Testing unmounted oculars covering one eye

### 3.1.1 Apparatus

#### 3.1.1.1 Telescope

A telescope with an aperture of nominally 20 mm and a magnification between 10 and 30, fitted with an adjustable eyepiece incorporating a reticule.

#### 3.1.1.2 Illuminated target

A target, consisting of a black plate incorporating the cut-out pattern shown in Figure 1, behind which is located a light source of adjustable luminance with a condenser, if necessary, to focus the magnified image of the light source on the telescope objective.

The large annulus of the target has an outer diameter of (23,0 ± 0,1) mm with an annular aperture of (0,6 ± 0,1) mm. The small annulus has an inner diameter of (11,0 ± 0,1) mm with an annular aperture of (0,6 ± 0,1) mm. The central aperture has a diameter of (0,6 ± 0,1) mm. The bars are nominally 20 mm long and 2 mm wide with a nominal 2 mm separation.

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