AS/NZS 1337.5:2004
EN 208:1999

Australian/New Zealand Standard™

Personal eye-protection

Part 5: Eye-protectors for adjustment work on lasers and laser systems (laser adjustment eye-protectors)

STANDARDS AUSTRALIA

STANDARDS NEW ZEALAND
Paerewa Aotearoa

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee SF-006, Eye Protection. It was approved on behalf of the Council of Standards Australia on 22 December 2003 and on behalf of the Council of Standards New Zealand on 16 February 2004. It was published on 22 March 2004.

The following are represented on Committee SF-006:

Guild of Dispensing Opticians, Australia
N.S.W. Rural Fire Service
New Zealand Association of Optometrists
New Zealand Employers and Manufacturers Association
Optical Distributors and Manufacturers Association of Australia
Optometrists Association Australia
Queensland University of Technology
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This Standard was issued in draft form for comment as DR 03058.

Australian Standard™

Personal eye-protection

Part 5: Eye-protectors for adjustment work on lasers and laser systems (laser adjustment eye-protectors)

First published as AS/NZS 1337.5:2004.

Published by Standards Australia International Ltd
GPO Box 5420, Sydney, NSW 2001, Australia

ISBN 0 7337 5737 5

PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-006, Eye Protection. It is identical with, and has been reproduced from EN 208:1999, *Personal eye-protection—Eye-protectors for adjustment work on lasers and laser systems (laser adjustment eye-protectors)* and incorporates Amendment 1:2002. The start and finish of text altered by amendment is indicated in the text by tags labelled A_1.

The objective of this Standard is to provide regulatory authorities, manufacturers, importers, distributors, retailers, employers, employees and other users with comprehensive requirements for laser adjustment filters and eye-protectors against laser radiation complying with the proposed AS/NZS 1337.5.

As this Standard is reproduced from an international publication, the following applies.

(a) Its number appears on the cover and title page while the International Standard number appears only on the cover.

(b) In the source text, 'this European Standard' should read 'this Australian/New Zealand Standard'.

(c) A full point substitutes for a comma when referring to a decimal marker.

References to European and international Standards should be replaced by equivalent Australian, New Zealand or Australian/New Zealand Standards, as follows:

Reference to International Standard or other publication		*Australian/New Zealand Standard*	
EN		AS/NZS	
166	Personal eye-protection—Specifications	—	
167	Personal eye-protection—Optical test methods	—	
168	Personal eye-protection—Non-optical test methods	—	
207	Personal eye-protection—Filters and eye-protectors against laser radiation (laser eye-protectors).	1337 1337.4	Personal eye-protection Part 4: Filters and eye-protectors against laser radiation (laser eye-protectors)
60825 60825-1	Safety of laser products Part 1: Equipment classification, requirements and user's guide	2211 2211.1	Safety of laser products Part 1: Equipment classification, requirements and user's guide
ISO/CIE			
10526	CIE standard colorimetric illuminants	—	
10527	CIE standard colorimetric observers	—	

The term 'informative' has been used in this Standard to define the application of the annex or appendix to which it applies. An 'informative' annex or appendix is only for information and guidance.

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AUSTRALIAN/NEW ZEALAND STANDARD

Personal eye-protection

Part 5: Eye-protectors for adjustment work on lasers and laser systems (laser adjustment eye-protectors)

1 Scope

This European Standard applies to laser adjustment filters and eye-protectors. These are filters and eye-protectors for use in adjustment work on lasers and laser systems as defined in EN 60825-1:1994 [i.e. LED (light emitting diode) radiation is included] where hazardous radiation occurs in the visible spectral range of 400 nm to 700 nm. Filters specified in this standard reduce this radiation to values defined for lasers of class 2 [≤ 1 mW for CW (continuous wave) lasers]. In this case aversion responses including the blink reflex contribute to eye-protection.

This standard defines requirements, test methods and marking. A guide is given in Annex B with regard to selection and use.

EN 207 applies to eye-protection against laser radiation where aversion responses, including the blink reflex are not stipulated, and laser radiation outside the visible spectral range.

NOTE Before selecting eye-protection according to this standard a risk assessment should be undertaken (see Annex B).

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.

EN 166:1995, *Personal eye-protection — Specifications.*

EN 167:1995, *Personal eye-protection — Optical test methods.*

EN 168:1995, *Personal eye-protection — Non-optical test methods.*

EN 207:1998, *Personal eye-protection — Filters and eye-protectors against laser radiation (laser eye-protectors).*

EN 60825-1:1994, *Safety of laser products, equipment classification, requirements and user's guide.*

ISO/CIE 10526:1991, *CIE standard colorimetric illuminants.*

ISO/CIE 10527:1991, *CIE standard colorimetric observers.*

3 Requirements

3.1 Spectral transmittance of filters and frames

The spectral transmittance values of the filters and the frames for the laser wavelength shall be as given in Table 1.

3.2 Luminous transmittance of filters

When assessed in accordance with **4.2**, the luminous transmittance of the filter relative to the D65 standard illuminant (see ISO/CIE 10526:1991) shall be at least 20 %, unless it is recommended in the information supplied by the manufacturer to increase accordingly the intensity of illumination at the relevant work place.

3.3 Stability of filters and frames to laser radiation

When tested according to **4.3**, the filters and frames shall meet the requirements of **3.1** and shall not lose their protective effect under the influence of laser radiation of the power (E) or energy density (H) given in Table 2 for a period of at least 10 s and for 100 pulses. They shall not show any induced transmission (reversible bleaching). No splinters shall come away from the side of the filter facing the eye under the influence of the laser radiation. Any melting or other damage of the surface is not considered negative if the protective effect is still ensured.