

AS/NZS 2211.1:1997

Australian/New Zealand Standard®

Laser safety

**Part 1: Equipment classification,
requirements and user's guide**

AS/NZS 2211.1:1997

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee SF/19, Personal Protection Against Laser Radiation. It was approved on behalf of the Council of Standards Australia on 17 January 1997 and on behalf of the Council of Standards New Zealand on 23 December 1996. It was published on 5 March 1997.

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF/19 on Personal Protection against Laser Radiation as a revision of AS 2211—1991. It is based on IEC 825-1:1993, *Safety of laser products*, Part 1: *Equipment classification, requirements and user's guide* except as follows:

- (a) The inclusion of requirements for an extra Class, 3BR. The Classification limits given in this Standard are the same as those in IEC 825-1, with the exception of the inclusion of an extra Classification, 3BR. Products manufactured to IEC 825-1 will comply with the Australian/New Zealand Standard, and vice versa, except for items categorized in Australia/New Zealand as 3BR. This is not expected to be a barrier to imported products, as the 3B requirements are more stringent than the 3BR. If a manufacturer or importer chooses to market their product as 3BR within Australia/New Zealand, the product would only require relabelling. Australia/New Zealand manufacturers intending to export products that are classified in accordance with this Standard as 3BR, are advised to ensure that those products comply with the requirements for Class 3B laser products.
- (b) The short term emission duration anomaly has been corrected by the inclusion of a new Clause 9.5, and by the changes to Clauses 13.3 and 13.3.1.
- (c) The classification of a laser product relies, in many instances, on assumed viewing conditions. A new Clause 8.2(m) has been added to provide unambiguous guidance on the value of α (the effective visual angle of the source) to be used in determining the retinal image size correction factor (C_6), and thereby the AEL. Without such guidance it is possible, by varying the assumed viewing conditions, to classify the same product into different Classes.
- (d) The consumer section has been altered to provide clearer and more extensive information. The user information (Section 3 and Appendix B), has been extensively rewritten and reorganized. A new Appendix F providing information on eye examinations has been added. A Foreword, providing a flowchart for the use of this Standard, has also been added.
- (e) Extra definitions have been provided, and (other than Clause 3.17.2) follow after those given in IEC 825-1.
- (f) Throughout the document, unclear wording has been clarified, deprecated terms such as 'fail-safe' have been replaced with preferred terms such as 'failure to safety', and where possible references to IEC Standards have been replaced with references to Australian, New Zealand or Joint Australian/New Zealand Standards.
- (g) Many of the diagrams and figures have been updated.
- (h) The wavelength range covered in the Standard has been lowered to 100 nm.

For ease of comparison, parity of Clause numbering with IEC 825-1 in Sections 1 and 2, and in Appendices A and E has been maintained.

The variations from IEC 825-1:1993 set out as points (a), (b), (c), (d) and (g) represent measures deemed to be essential to the protection of human health and safety, as provided for under Section 2.2 of the Technical Barriers to Trade Agreement (GATT/TBT Code). Because of the extent of these technical changes, a number of consequential editorial changes and revisions of the informative material were necessitated. The document was also re-keyed from the original to assist in readability.

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

CONTENTS

	<i>Page</i>
FOREWORD USER'S GUIDE—FLOW CHART	6
 SECTION 1 GENERAL	
1 SCOPE AND OBJECT	7
1.1 Scope	7
1.2 Object	8
2 REFERENCED DOCUMENTS	8
3 DEFINITIONS	9
 SECTION 2 MANUFACTURING REQUIREMENTS	
4 ENGINEERING SPECIFICATIONS	17
4.1 General remarks	17
4.2 Protective housing	17
4.3 Access panels and safety interlocks	17
4.4 Remote interlock connector	18
4.5 Key control	18
4.6 Laser radiation emission warning	18
4.7 Beam stop or attenuator	19
4.8 Controls	19
4.9 Viewing optics	19
4.10 Scanning safeguard	19
4.11 Alignment aids	19
4.12 'Walk-in' access	19
4.13 Environmental conditions	20
4.14 Protection against other hazards	20
5 LABELLING	20
5.1 General	20
5.2 Class 1	20
5.3 Class 2	20
5.4 Class 3A	21
5.5 Class 3B	21
5.6 Class 4	21
5.7 Aperture label	21
5.8 Radiation output and Standards information	21
5.9 Labels for access panels	24
5.10 Warning for invisible laser radiation	24
5.11 Warning for visible laser radiation	24
5.12 Warning for LED radiation	24
6 OTHER INFORMATIONAL REQUIREMENTS	24
6.1 Information for the user	24
6.2 Purchasing and servicing information	25
7 ADDITIONAL REQUIREMENTS FOR SPECIFIC LASER PRODUCTS	31
7.1 Medical laser products	31
7.2 Laser fibre optic transmission system	37

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