Australian/New Zealand Standard™

Safety of laser products

Part 10: Application guidelines and explanatory notes to AS/NZS 2211.1 (IEC TR 60825-10:2002, MOD)





#### AS/NZS 2211.10:2004

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee SF-019, Personal Protection Against Laser Radiation. It was approved on behalf of the Council of Standards Australia on 1 April 2004 and on behalf of the Council of Standards New Zealand on 16 April 2004. It was published on 3 June 2004.

The following are represented on Committee SF-019:

Australasian Faculty of Occupational Medicine
Australian Chamber of Commerce and Industry
Australian Defence Force Academy
Australian Dental Association
Australian Radiation Laboratory
Department of Defence (Australia)
National Radiation Laboratory New Zealand
Optus Communications
Queensland Health
Queensland University of Technology
Royal Australian College of Ophthalmologists
Telecom New Zealand
Telstra Corporation
WorkCover New South Wales

### Keeping Standards up-to-date

Standards are living documents which reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued. Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments which may have been published since the Standard was purchased.

Detailed information about joint Australian/New Zealand Standards can be found by visiting the Standards Web Shop at www.standards.com.au or Standards New Zealand web site at www.standards.co.nz and looking up the relevant Standard in the on-line catalogue.

Alternatively, both organizations publish an annual printed Catalogue with full details of all current Standards. For more frequent listings or notification of revisions, amendments and withdrawals, Standards Australia and Standards New Zealand offer a number of update options. For information about these services, users should contact their respective national Standards organization.

We also welcome suggestions for improvement in our Standards, and especially encourage readers to notify us immediately of any apparent inaccuracies or ambiguities. Please address your comments to the Chief Executive of either Standards Australia International or Standards New Zealand at the address shown on the back cover.

AS/NZS 2211.10:2004

## Australian/New Zealand Standard™

# Safety of laser products

Part 10: Application guidelines and explanatory notes to AS/NZS 2211.1 (IEC TR 60825-10:2002, MOD)

Originated as AS/NZS 2211.1 Supplement 1—1999. Revised and redesignated as AS/NZS 2211.10:2004.

### **COPYRIGHT**

© Standards Australia/Standards New Zealand

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Jointly published by Standards Australia International Ltd, GPO Box 5420, Sydney, NSW 2001 and Standards New Zealand, Private Bag 2439, Wellington 6020

### **PREFACE**

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-019, Personal Protection Against Laser Radiation to supersede AS/NZS 2211.1 Supp1:1999, Laser safety, Part 1: Equipment classification, requirements and user's guide, Supplement 1: Application guidelines and explanatory notes, (Supplement to AS/NZS 2211.1:1977).

The Standard is an adoption with national modifications and has been reproduced from IEC TR 60825-10:2002, Safety of laser products, Part 10: Application guidelines and explanatory notes to IEC 60825-1.

For the purpose of this Standard, the IEC text is supplemented as set out in Appendix ZZ. These changes are indicated by a marginal bar against the relevant clause or part thereof affected.

The objective of this Standard is to provide users of AS/NZS 2211.1 with background information for that Standard (specifically the laser hazard, classification system, intrabeam viewing and extended source viewing), giving the user an insight into the physics behind the Standards, so that the user may correctly interpret its requirements.

The term 'normative' has been used in this Standard to define the application of the annex or appendix to which it applies. A 'normative' annex or appendix is an integral part of a Standard.

As this Standard is reproduced from an International Standard, 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 technical report' should read 'this Australian/New Zealand Standard'.
- (c) A full point should be substituted for a comma when referring to a decimal marker.

References to International Standards should be replaced by references Australian Standards, as follows:

Reference	e to International Standard	Australia	Australian/New Zealand Standard		
IEC		AS/NZS			
60825	Safety of laser products	2211	Safety of laser products		
60825-1	Part 1: Equipment classification,	2211.1	Part 1: Equipment classification,		
	requirements and user's guide		requirements and user's guide		

### **CONTENTS**

INT	RODU	JCTION	N	iv			
1	Scop	e		1			
2	·						
3	-		locuments				
4							
5							
6	-		aulation is nazaruous				
7			ermissible exposures (MPEs)				
8		-	cation system				
	8.1		product classification				
		8.1.1	Class 1 and 1M laser products				
		8.1.2	Class 2 and 2M laser products				
		8.1.3	Class 3R laser products	9			
		8.1.4	Class 3B laser products	9			
		8.1.5	Class 4 laser products	9			
		8.1.6	Product modification				
	8.2		dures for hazard control				
9			iewing				
	9.1	.1 General					
	9.2						
	9.3	· ·					
	9.4	' '					
	9.5		of for magnifying optics				
	9.6 9.7	•	ılar reflectionsspheric attenuation				
10			ource viewing				
10	10.1		ral				
			ded sources				
			lation of r <sub>NOHD</sub>				
	10.5	Calcul	NOHD ······	29			
Anr	nex A	(normat	tive) Flowcharts	30			



The ic a nee previous i arenace are chare pasheaten at the limit selection	This is a free preview.	Purchase the	entire publication	at the link below:
--	-------------------------	--------------	--------------------	--------------------

**Product Page** 

- Dooking for additional Standards? Visit Intertek Inform Infostore
- Dearn about LexConnect, All Jurisdictions, Standards referenced in Australian legislation