AS/NZS IEC 62471.2:2012
IEC/TR 62471-2, Ed. 1.0 (2009)

AS/NZS IEC 62471.2:2012

Australian/New Zealand Standard™

Photobiological safety of lamps and lamp systems

Part 2: Guidance on manufacturing requirements relating to non-laser optical radiation safety

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 16 February 2012 and on behalf of the Council of Standards New Zealand on 16 February 2012.
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The following are represented on Committee SF-019:

Australasian Faculty of Occupational and Environmental Medicine
Australian Dental Association
Defence Materiel Organisation, Australia
Defence Science and Technology Organisation
Electronics Industry Association
National Radiation Laboratory, New Zealand
Royal Australian and New Zealand College of Ophthalmologists
Safety Institute of Australia
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University of New South Wales at the Australian Defence Force Academy

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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 or Standards New Zealand at the address shown on the back cover.

This Standard was issued in draft form for comment as DR AS/NZS IEC 62471.2.

Australian/New Zealand Standard™

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Part 2: Guidance on manufacturing requirements relating to non-laser optical radiation safety

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee SF-019, Personal Protection Against Laser Radiation.

The objectives of this Standard are as follows:

(a) To provide, in the context of risk group classifications defined in AS/NZS IEC 62471:2011, the basis for optical radiation safety requirements of non-laser products, serving as a guide for development of safety requirements in vertical product standards and assisting lamp system manufacturers in the interpretation of safety information provided by the lamp manufacturers.

(b) To provide guidance on the requirements for optical radiation safety assessment, the allocation of safety measures and the labelling of products.

(c) To ensure the hazards associated with lamps and lamps systems are adequately managed by provision of examples of safety requirements based on the assigned risk group of a product including the use of labels and instructions to provide necessary safety information.

This Standard is identical with, and has been reproduced from, IEC/TR 62471-2, Ed. 1.0 (2009), *Photobiological safety of lamps and lamp systems*— Part 2: *Guidance on manufacturing requirements relating to non-laser optical radiation safety.*

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 substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

Reference to International Standard		*Australian/New Zealand Standard*	
IEC 62471	Photobiological safety of lamps and lamp systems	AS/NZS IEC 62471	Photobiological safety of lamps and lamp systems
60825	Safety of laser products	60825	Safety of laser products
60417	Graphical symbols for use on equipment	AS 60417	Graphical symbols for use on equipment

Standards in the IEC 60825 series may have been adopted as either AS/NZS IEC 60825 series standards, e.g. IEC/TR 60825-14 has been adopted as AS/NZS IEC 60825.14, or AS/NZS 2211 series standards, e.g. IEC 60825-4 has been adopted as AS/NZS 2211.4.

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

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INTRODUCTION

Optical radiation hazards from all types of lamps or other broadband light sources are assessed by the application of IEC 62471:2006 (Edition 1), *Photobiological safety of lamps and lamp systems*. IEC 62471 covers LEDs as well as incandescent, low and high pressure gas-discharge, arc and other lamps. It also covers electrically-powered optical radiation sources that are not lamps. The standard provides a risk group classification system for all lamps and lamp systems, and the measurement conditions are well developed. IEC 62471 does not include manufacturing or user safety requirements that may be required as a result of a lamp or lamp system being assigned to a particular risk group. The safety requirements for lamp systems necessarily vary and are best dealt with in vertical standards. This Part 2 provides the basis for safety requirements dependent upon risk group classification and examples thereof. The assigned risk group of a product may be used to assist with risk assessments, e.g. for occupational exposure in workplaces. National requirements may exist for the assessment of products or occupational exposure.

NOTE 1 There are some instances where the IEC 60825 laser product standards may be useful for a nearly “point” source, as in an LED fibre source or a superluminescent diode (see 3.16).

NOTE 2 IEC 62471 is currently being revised and will be published as IEC 62471-1.

AUSTRALIAN/NEW ZEALAND STANDARD

Photobiological safety of lamps and lamp systems

Part 2:
Guidance on manufacturing requirements relating to non-laser optical radiation safety

1 Scope

This technical report provides the basis for optical radiation safety requirements of non-laser products, serving as a guide for development of safety requirements in vertical product standards and assisting lamp system manufacturers in the interpretation of safety information provided by the lamp manufacturers.

This report provides guidance on:

- requirements for optical radiation safety assessment;
- allocation of safety measures;
- labelling of products.

This technical report does not address safety requirements of intentional exposure to optical radiation from sun tanning equipment, ophthalmic instruments or other medical/cosmetic devices whose specific safety issues are addressed through appropriate standards.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 62471, *Photobiological safety of lamps and lamp systems*

IEC 60825 (all parts), *Safety of laser products*

IEC 60050-845, *International Electrotechnical Vocabulary – Chapter 845: Lighting*

IEC 60417, *Graphical symbols for use on equipment*

3 Terms and definitions

For the purposes of this document, the terms and definitions of IEC 62471 and the following additional terms and definitions apply.

3.1
controlled access location
location where an engineering and/or administrative control measure is established to restrict access except to authorised personnel with appropriate safety training

3.2
exposure hazard value
EHV
value defined as follows:

$$EHV\,(distance, exposure\ \ time) = \frac{Exposure\ level\ (distance, exposure\ time)}{Exposure\ limit\ value}$$