

Australian Standard[®]

**ARTIFICIAL ILLUMINATION IN
SHIPS**

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PREFACE

This edition of this standard was prepared by the Association's Committee on Ship-building, to supersede AS 1150—1972. There have been no technical changes to the standard, but some minor corrections and updating of references to Australian standards have been incorporated.

The requirements of various regulations under the Navigation Act have been considered in its preparation. Cognizance has also been taken of AS 1680, Code of Practice for Interior Lighting and the Visual Environment.

Users of this standard should also note that, in addition to observing the requirements of this standard, they should at the same time ensure compliance with such statutory and classification society requirements, rules and regulations as may be applicable to the individual ship concerned.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard
for
ARTIFICIAL ILLUMINATION IN SHIPS

1 SCOPE. This standard establishes the minimum levels of artificial illumination in ships. It deals primarily with accommodation spaces and work areas. It does not refer to emergency illumination, nor does it refer to glare control, distribution of light from luminaires, and other factors affecting lighting quality.

NOTE: Relevant recommendations on lighting quality requirements are given in AS 1680, Code of Practice for Interior Lighting and the Visual Environment.

2 REFERENCED DOCUMENT. The following standard is referred to in this standard:

BS 667 Portable Photoelectric Photometers

3 DEFINITIONS. For the purpose of this standard the following definitions apply:

3.1 'Shall' and 'Should'—shall is taken to be mandatory and should is taken to be advisory.

3.2 Boundary—a bulkhead, door, fixed equipment or furnishings exceeding a height of 1.5 m.

3.3 Illumination—the density of luminous flux incident upon a surface.

NOTE: The unit of illumination is the 'lux', this being the illumination on a surface 1 square metre in area receiving a uniformly distributed flux of 1 lumen.

3.4 Illumination ratio—the ratio of the maximum to the minimum illumination in a space, measured as prescribed in this standard.

3.5 General illumination—illumination of a space without special provision for local requirements within that space.

3.6 Local illumination—the illumination of a specific task area by a luminaire specially provided for the purpose.

3.7 Luminaire—a complete lighting unit (fixed or portable) including one or more lamps, together with any associated equipment used to control or redistribute the light therefrom.

NOTE: It does not include permanent parts of a ship such as a deckhead or other structural element.

3.8 Luminous flux—the radiant energy flux evaluated according to the spectral sensitivity of the 'standard' human eye.

NOTE: The unit of luminous flux, in terms of which the amount of light emitted or received is expressed, is the 'lumen'. One lumen is the luminous flux emitted in unit solid angle (1 steradian) by a uniform 'point' source of 1 candela.

3.9 Luminous intensity—the luminous flux of a light source in a given direction within an infinite

tesimally narrow cone containing that direction, divided by the solid angle of the cone.

NOTE: The unit of luminous intensity is the 'candela' which is approximately equal to the former 'international candle'.

3.10 Task area—the area within a space in which a specific visual task is carried out, e.g. workbench, chart table, desk blotter, instrument panel.

3.11 Working plane—the horizontal, vertical, or inclined plane in which the task area lies.

4 TEST EQUIPMENT. Measurements of illumination shall be made using a photometer complying with BS 667.

5 MEASUREMENT OF ILLUMINATION.

5.1 General Illumination. Measurements within a space shall be made with all luminaires in use at maximum designed intensity, and with all sources of external illumination excluded. Measurements may be made with local illumination in use except that reading luminaires at the head of berths shall not be used in multi-berth cabins.

For general illumination of a space, the illumination shall be measured on a horizontal plane 750 mm above the deck or platform of the space concerned.

Measurements shall be made within an area defined by lines midway between deckhead luminaires and the adjacent boundaries of the space. (See Figs 1 and 2 for the typical examples.)

5.2 Local Illumination. For local illumination of a task area the illumination shall be measured in the working plane of the task area.

6 ILLUMINATION RATIO. The illumination ratio shall not exceed 3:1.

NOTE: This requirement need not apply to open decks, passageways nor machinery spaces where it may be impracticable, nor to recreation and similar areas where special effect lighting is specified.

7 ILLUMINATION. The minimum artificial illumination in any space or on any task area in new ships at date of handover shall not be less than the value given in column 2 of Table 1.

The minimum artificial illumination in any space or on any task area in ships in service shall not be less than the value given in column 3 of Table 1.

NOTES:

- For the purpose of this standard, a factor of approximately 0.7 has been used to obtain the minimum artificial illumination for ships in service.
- Notes on design and maintenance of lighting installations are given in Appendix A.