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Ships and marine technology — Navigation — Daylight signalling lamps

Navires et technologie maritime — Navigation — Lampes de signalisation diurne

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 25861 was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 6, *Navigation*.

Introduction

ISO 17884 "*Ships and marine technology — Searchlights for high-speed craft*" specifies many requirements that are also applicable for this International Standard, ISO 25861 "*Ships and marine technology — Navigation — Daylight signalling lamps*". For a clearer structure, it is proposed for the future to merge these International Standards into one International Standard with a general part and an Annex A for searchlights and an Annex B for daylight signalling lamps.

Ships and marine technology — Navigation — Daylight signalling lamps

1 Scope

This International Standard applies to daylight signalling lamps, which are required for certain ships pursuant to Chapter V of the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended, and Chapter 8 of the International Code of Safety for High-Speed Craft, in force, in accordance with the Performance Standards for Daylight Signalling Lamps [IMO Resolution MSC.95(72)].

Where the wording of this International Standard is identical to that in MSC.95(72), all such text is printed in italics and the resolution and paragraph numbers are indicated in brackets.

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.

ISO 17884, *Ships and marine technology — Searchlights for high-speed craft*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

IEC 60598-1, *Luminaires — Part 1: General requirements and tests*

IEC 60945, *Maritime navigation and radiocommunication equipment and systems — General requirements — Methods of testing and required test results*

IMO Resolution A.694(17*), General requirements for shipborne radio equipment forming part of the Global maritime distress and information system (GMDSS) and for electronic navigational aids*

IMO Resolution A.813(19), *General requirements for electromagnetic compatibility (EMC) for all electrical and electronic ship's equipment*

IMO Resolution MSC.95(72), *Performance standards for daylight signalling lamps*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 17884 and the following apply.

NOTE The IMO-used expressions “half angle of divergence” and “tenth angle of divergence” are synonymous to “half peak divergence” and “tenth peak divergence”.

3.1
daylight signalling lamps
lamps suitable for transmitting white light signals to an observer by focused light beams which may be fixed or portable

[MSC.95(72), 4]

3.2
switch-off time
the period of time required for luminous intensity to decrease to 5 % of the required luminous intensity after the daylight signalling lamp has been switched off

[MSC.95(72), 4]

4 Requirements

4.1 Required functions and their availability [MSC.95(72), 1.2, 5.1]

Daylight signalling lamps shall *be suitable for conveying information between ships, or between ship and shore, by means of light signals, both by day and by night.*

Daylight signalling lamps shall *be suitable for giving light signals, which can be clearly distinguished visually as separate signals by an observer.*

4.2 Switch-on and switch-off time [MSC.95(72), 5.2.6]

The sum of switch-on and switch-off times shall *not exceed 500 ms.*

4.3 Luminous intensity [MSC.95(72), 5.2]

By day and with an atmospheric transmission of 0,8, the visibility of light signals emitted by daylight signalling lamps shall *be at least 2 nautical miles, equalling a required luminous intensity of 60 000 cd.*

The axial luminous intensity of daylight signalling lamps shall *reach at least 90 % of the maximum luminous intensity.*

The luminous intensity of daylight signalling lamps shall *have its maximum in the centre of the luminous intensity distribution. It* shall *decrease evenly from the centre of luminous intensity distribution.*

The half peak divergence α_h shall *not exceed 9°, the tenth peak divergence* α_t shall *not exceed 14°.*

The effective light emission sectors of daylight signalling lamps shall *be circular.*

4.4 Chromaticity of the emitted light [MSC.95(72), 5.2.5]

The chromaticity of the white signal light shall *lie within the following corner coordinates of the* chromaticity *diagram specified by the International Commission on Illumination (CIE)*, see Table 1.

Table 1 — Chromaticity coordinates

Chromaticity coordinates	*x*	*0,525*	*0,525*	*0,452*	*0,310*	*0,310*	*0,443*
	y	*0,382*	*0,440*	*0,440*	*0,348*	*0,283*	*0,382*

4.5 Malfunctions, warnings, alarms and indications [MSC.95(72), 5.3]

Daylight signalling lamps shall *be provided with an indication of their operational status.*

If a separate power supply is used, instead of using shipborne power supply, daylight signalling lamps shall be provided with a battery charge level indicator, fixed to the daylight signalling lamp or the battery housing.

4.6 Ergonomic and operational controls [MSC.95(72), 6]

Daylight signalling lamps and any battery required for operation shall *be designed in such a way that safe handling in the intended application is ensured. The daylight signalling lamp* shall *be capable of being operated by personnel wearing* heavy working *gloves.*

The operational controls of daylight signalling lamps shall *meet the requirements of IMO Resolution A.694(17) and the applicable requirements of* IEC 60945.

4.7 Durability and resistance to environmental conditions [MSC.95(72), 7.1]

Daylight signalling lamps shall be constructed in accordance with IEC 60598-1.

The illuminant shall *be safely fitted in the daylight signalling lamp; use of screwed sockets* shall *be avoided.*

Daylight signalling lamps shall *be designed in such a way that the illuminant can be easily replaced also in the dark.*

The sighting mechanism shall *be mounted in a fixed attitude, parallel to the optical axis.*

All parts of daylight signalling lamps shall *be made of anti-magnetic material.*

A degree of protection of at least IP 56 according to IEC 60529 shall be reached.

Daylight signalling lamps shall *be so constructed that the accumulation of condensed water is avoided.*

The materials used shall *withstand heat generation during operation.*

With respect to durability and resistance to environmental conditions, daylight signalling lamps shall *meet the* requirements specified in IMO *Resolution A.694(17) and the applicable* requirements of IEC 60945.

4.8 Electromagnetic compatibility (EMC)/interference [MSC.95(72), 7.2]

With respect to electrical and electromagnetic compatibility/*interference daylight signalling lamps* shall *meet the requirements of* IMO *Resolutions A.694(17) and A.813(19) and the applicable* requirements of IEC 60945.

The tests shall be carried out only on daylight signalling lamps that are not purely resistive loads.

4.9 Power supply [MSC.95(72), 7.3]

Daylight signalling lamps shall *not be solely dependent upon the ship´s main or emergency sources of electrical energy.*

Daylight signalling lamps shall *be provided with a portable battery with a complete weight of not more than 7.5 kg.*

The portable battery shall *have sufficient capacity to operate the daylight signalling lamp for a period of not less than 2 h.*

The power supply of daylight signalling lamps shall *meet the requirements of* IMO *Resolution A.694(17) and the applicable* requirements of IEC 60945 and ISO 17884.

4.10 Maintenance [MSC.95(72), 7.4]

With respect to maintenance, daylight signalling lamps shall *meet the requirements of* IMO *Resolution A.694(17) and the applicable* requirements of IEC 60945.