

## **ANNEX 13**

### **RESOLUTION MSC.95(72) (adopted on 22 May 2000)**

#### **PERFORMANCE STANDARDS FOR DAYLIGHT SIGNALLING LAMPS**

THE MARITIME SAFETY COMMITTEE,

RECALLING Article 28(b) of the Convention on the International Maritime Organization concerning the functions of Committee,

RECALLING ALSO resolution A.886(21), by which the Assembly resolved that the functions of adopting performance standards for radio and navigational equipment, as well as amendments thereto, shall be performed by the Maritime Safety Committee on behalf of the Organization,

RECALLING FURTHER the provisions of chapter V of the International Convention for the Safety of Life at Sea, 1974 (SOLAS), as amended, chapter 13 of the International Code of Safety for High-Speed Craft (HSC Code), in force, and chapter X of the Torremolinos Protocol of 1993 relating to the Torremolinos International Convention for the Safety of Fishing Vessels, 1977,

RECOGNIZING that, for safety reasons, daylight signalling lamps are necessary on board for signalling in different situations, e.g. according to COLREGs, the IAMSAR Manual and the International Code of Signals,

BEARING IN MIND the obligation for type approval of daylight signalling lamps according to the HSC Code, the 1993 Torremolinos Protocol and SOLAS, to ensure operational reliability and suitability and to ensure a common level of safety,

HAVING CONSIDERED the recommendation made by the Sub-Committee on Safety of Navigation at its forty-fifth session,

1. ADOPTS the Recommendation on Performance Standards for Daylight Signalling Lamps, set out in the Annex to the present resolution;
2. RECOMMENDS Governments to ensure that daylight signalling lamps fitted in compliance with relevant international instruments in force on or after 1 July 2002 conform to performance standards not inferior to those specified in the annex to the present resolution.

## ANNEX

### **RECOMMENDATION ON PERFORMANCE STANDARDS FOR DAYLIGHT SIGNALLING LAMPS**

#### **1 OBJECTIVES OF DAYLIGHT SIGNALLING LAMPS FOR CRAFTS**

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

#### **2 APPLICATION**

These performance standards should be applied 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, 1974, as amended, and chapter 8 of the International Code of Safety for High-Speed Craft, in force.

#### **3 RELATED REQUIREMENTS INVOLVED**

The following standards should be additionally applied, as far as applicable:

- Resolution A.694(17) on General Requirements for Shipborne Radio Equipment forming Part of the Global Maritime Distress and Safety System (GMDSS) and for Electronic Navigational Aids;
- Resolution A.813(19) on General Requirements for Electromagnetic Compatibility (EMC) for all Electrical and Electronic Ship's Equipment;
- IEC Publication 60945 "Maritime Navigation and Radiocommunication Equipment and Systems-General Requirements, Methods of Testing and Required Test Results"; and
- CIE Publication No. 2.2 "Colors of Light Signals".

#### **4 DEFINITIONS**

"Daylight signalling lamps" means lamps suitable for transmitting white light signals to an observer by focused light beams which may be fixed or portable.

"Switch-on time" means the period of time required for reaching 95% of the required luminous intensity after the daylight signalling lamp has been switched on.

"Switch-off time" means 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.

## **5 FUNCTIONAL REQUIREMENTS**

### **5.1 Required functions and their availability**

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

### **5.2 Reliability, accuracy and discrimination**

5.2.1 By day and with an atmospheric transmission of 0.8, the visibility of light signals emitted by daylight signalling lamps should be at least 2 nautical miles, equalling a required luminous intensity of 60,000 cd.

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

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

5.2.4 The half angle of divergence  $a_h$  should not exceed  $9^\circ$ , the tenth angle of divergence  $a_z$  should not exceed  $14^\circ$ .

5.2.5 The chromaticity of the white signal light should lie within the following corner co-ordinates of the diagram specified by the International Commission on Illumination (CIE) in CIE Publication No. 2.2:

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

5.2.6 The effective light emission sectors of daylight signalling lamps should be circular. The sum of switch-on and switch-off times should not exceed 500 ms.

### **5.3 Malfunctions, warnings, alarms and indications**

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

## **6 OPERATIONAL REQUIREMENTS**

### **6.1 Ergonomy**

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

## **6.2 Operational controls**

The operational controls of daylight signalling lamps should meet the requirements of resolution A.694(17) and the applicable international standards.\*

## **7 DESIGN AND INSTALLATION**

### **7.1 Durability and resistance to environmental conditions**

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

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

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

7.1.4 All parts of daylight signalling lamps should be made of anti-magnetic material.

7.1.5 Daylight signalling lamps should be so constructed that the accumulation of condensed water is avoided.

7.1.6 The materials used should withstand heat generation during operation.

7.1.7 With respect to durability and resistance to environmental conditions, daylight signalling lamps should meet the requirements specified in resolution A.694(17) and in the applicable international standards.\*

### **7.2 Interference**

With respect to electrical and electromagnetic interference daylight signalling lamps should meet the requirements of resolutions A.694(17) and A.813(19) and the applicable international standards.\*

### **7.3 Power supply**

7.3.1 Daylight signalling lamps should not be solely dependent upon the ship's main or emergency sources of electrical energy.

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

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

7.3.4 The power supply of daylight signalling lamps should meet the requirements of resolution A.694(17) and the applicable international standards.\*

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\* Refer to IEC Publication 60945

## **7.4 Maintenance**

With respect to maintenance, daylight signalling lamps should meet the requirements of resolution A.694(17) and the applicable international standards.\*

## **8 BACK-UP AND FALL-BACK ARRANGEMENTS**

Each daylight signalling lamp should be provided with at least three spare illuminants complying with the type-tested illuminant.

## **9 SAFETY PRECAUTIONS**

The outer parts of daylight signalling lamps should not reach temperatures during operation which restrict their manual use. Additionally, daylight signalling lamps should meet the safety requirements of resolution A.694(17) and the applicable international standards.\*

## **10 MARKING AND IDENTIFICATION**

10.1 Daylight signalling lamps should be marked clearly and durably with the following data:

- .1 identification of the manufacturer;
- .2 equipment type number or model identification under which it was type tested; and
- .3 serial number of the unit.

10.2 On the illuminant, the manufacturer's label and the voltage and power consumption should be marked clearly and durably.

10.3 Daylight signalling lamps should further be marked to meet the requirements of resolution A.694(17) and the applicable international standards.\*

## **11 DOCUMENTATION**

Daylight signalling lamps should be delivered complete with their technical documentation. Such documentation should include the following information, if applicable:

General information:

- manufacturer;
- type designation;
- general description of the equipment; and
- ancillary equipment and description.

Instructions for operation of equipment:

- general information on mains connection;
- power supply data (voltage, power consumption);
- description of start-up procedures; and
- description of ways of checking the parallel adjustment of sighting mechanism and luminous intensity axis.

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\* Refer to IEC Publication 60945

Troubleshooting; maintenance and service :

- description of illuminant replacement;
- description of adjustment of sighting mechanism;
- special tools required, maintenance material and spare parts (e.g. spare illuminants, fuses, mirrors and covers);
- equipment care and maintenance on board; and
- available services.

Documentation for daylight signalling lamps should meet the requirements of resolution A.694(17) and the applicable international standards.\*

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\* Refer to IEC Publication 60945