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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB 12708-2020

Colours of light signals on aids to navigation

航标灯光信号颜色

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Foreword

This standard was drafted in accordance with the rules given in GB/T 1:1-2009: This standard replaces GB 12708-1991 "Aids to Navigation Light Signal Color": Compared with GB 12708-1991, except for editorial changes, the main The technical changes are as follows:

---Added the types and notes of the color of the navigation mark light signal (see 3:1, 2:1 in the:1991 edition);

--- Deleted the boundary equation of the light chromaticity range (see 2:2:1 of the:1991 edition);

---Modified the chromaticity area range of the navigation mark light signal color (see 3:2, 2:2:2 of the:1991 edition);

---Adjusted the content of the lighting color and chromaticity range other than the prohibition of use (see 3:4, Chapter 3 of the:1991 edition);

---Added general measurement requirements (see Chapter 4): This standard was proposed and managed by the Ministry of Transport of the People's Republic of China: The previous versions of the standard replaced by this standard are as follows:

---GB 12708-1991: Navigation beacon light signal color

1 Scope

China's mandatory national standard for the colours of light signals on aids to navigation. A mariner at night sees nothing of a buoy or a beacon except its light, and the whole system of lateral and cardinal marks depends on that light being recognisably red, green, white or yellow at a distance and in haze - not approximately, but within defined chromaticity boundaries, because a green that drifts towards white or a red that drifts towards orange puts a vessel on the wrong side of a channel. The standard fixes those boundaries as regions on the chromaticity diagram, following the international convention so that a Chinese buoy reads correctly to a foreign ship, and specifies how the colour is measured

and how it must be maintained as the lamp ages and the lens weathers. It applies to the light signals of aids to navigation in Chinese waters.

This standard specifies the color type, chromaticity area and measurement requirements of the navigation mark light signal: This standard is applicable to all kinds of light signals of Chinese maritime areas and inland navigation marks:

2 Normative references

The following documents are indispensable for the application of this document: For dated reference documents, only the dated version applies to this article Pieces: For undated references, the latest version (including all amendments) applies to this document:

GB/T 8417-2003 light signal color

3 The color type and chromaticity area range of the navigation mark light signal

1 The color of the navigation mark light signal should be red, yellow, green, white, and blue: Other colors should not be used: 3:

2 The chromaticity coordinate (x ,

y) values of the intersection of the red, yellow, green, white and blue light chromaticity area limits are shown in Table 1: Table 1 CIE1931 Chromaticity Coordinate Table of Navigation Mark Light Signal Color Light color 1 2 3 4 5 $xyxyxyxyxy$ Red 0:710 0:290 0:690 0:290 0:660 0:320 0:680 0:320-- Yellow 0:5865 0:413 0:581 0:411 0:555 0:435 0:560 0:440-- Green 0:009 0:720 0:284 0:520 0:207 0:397 0:013 0:494-- White 0:440 0:382 0:285 0:264 0:285 0:332 0:453 0:440 0:453 0:382 Blue 0:104 0:100 0:150 0:100 0:175 0:070 0:149 0:025-- 3:

3 The chromaticity area of the navigation mark light signal color drawn on the CIE1931 chromaticity diagram (x ,

y) is shown in Figure 1: 3:

4 The chromaticity coordinate values of red, yellow, green, white and blue lights, no matter what color filter material is used, should be within the requirements specified in 3:2 and 3:3: Within the corresponding chromaticity area:

4 Measurement requirements

1 The color of the navigation mark light signal should be determined by obtaining the CIE1931 chromaticity coordinate value (x , y): 4:

2 The color of the light signal of the navigation mark using LED as the light source should

adopt the spectral radiometric method to obtain the CIE1931 chromaticity coordinate value (x, y):

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