

KES

Testing Method for Color of Petroleum Product

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1. Scope of application

This standard shall be applied to testing method of measure the color of lubricant with a colorimeter.

2. Union colorimeter method

2.1 Equipment

(1) This is shown in figure 1 and consists of a : A sample container, b : A cap of sample container, b' : A white light, c : A pair of standard color glass.

(2) Dark box

This is made of wood or metal with about 460 mm length, about 40 mm inner height, about 55 mm width from observer, and about 75 mm from light source as shown in figure 2. Paint inner side black to isolate the box from outer light.

Block the box with about 25 mm-thick plate (e) at about 28mm distance from the observer, and make hole with 13 mm diameter at its center.

In addition, block the box with about 25 mm-thick plate (e) at about 55 mm distance from the light source, and make vertical slit to insert standard color glass at right half side.

On central upper and lower part of this plate, make two holes with about 14 mm diameter from the observer, and about 19 mm diameter from the light source.

The distance between these two holes is 38 mm and symmetric about centerline of dark box.

Standard color glass should move up and down freely.⁽¹⁾

Union color number on a left side of a dark box should be legible through reflection of glass.

The frosted glass should not contain impurities like bubbles, and it should have uniform density and thickness. Particularly, its selective absorption should be least and it must disperse the light.

Attach about 3 mm-thick plate from the frosted glass to the plate, in which standard color glass is inserted, along the axis of dark box to divide the dark box into two rooms from the light source. Make holes on upper center of each room to put the sample container.

Note (1) There are two kinds of movements for standard color glass: up-and-down type and rotational type.

(3) Standard color glass

12 kinds in table 1 make a set and they are inserted in the frame in figure 1.

Width of the standard color glass should be more than 16 mm.

(4) Sample container

As shown in figure 3, this is made of colorless and transparent glass and the shape is cylindrical with 32.5 ~ 33.4 mm inner diameter, 1.6 ± 0.4 mm thickness, and 127 ± 6.4 mm height.

(5) Cap of the sample container

This is made of appropriate material painted black inside. The cap should completely block the light when the sample container is placed inside the colorimeter.

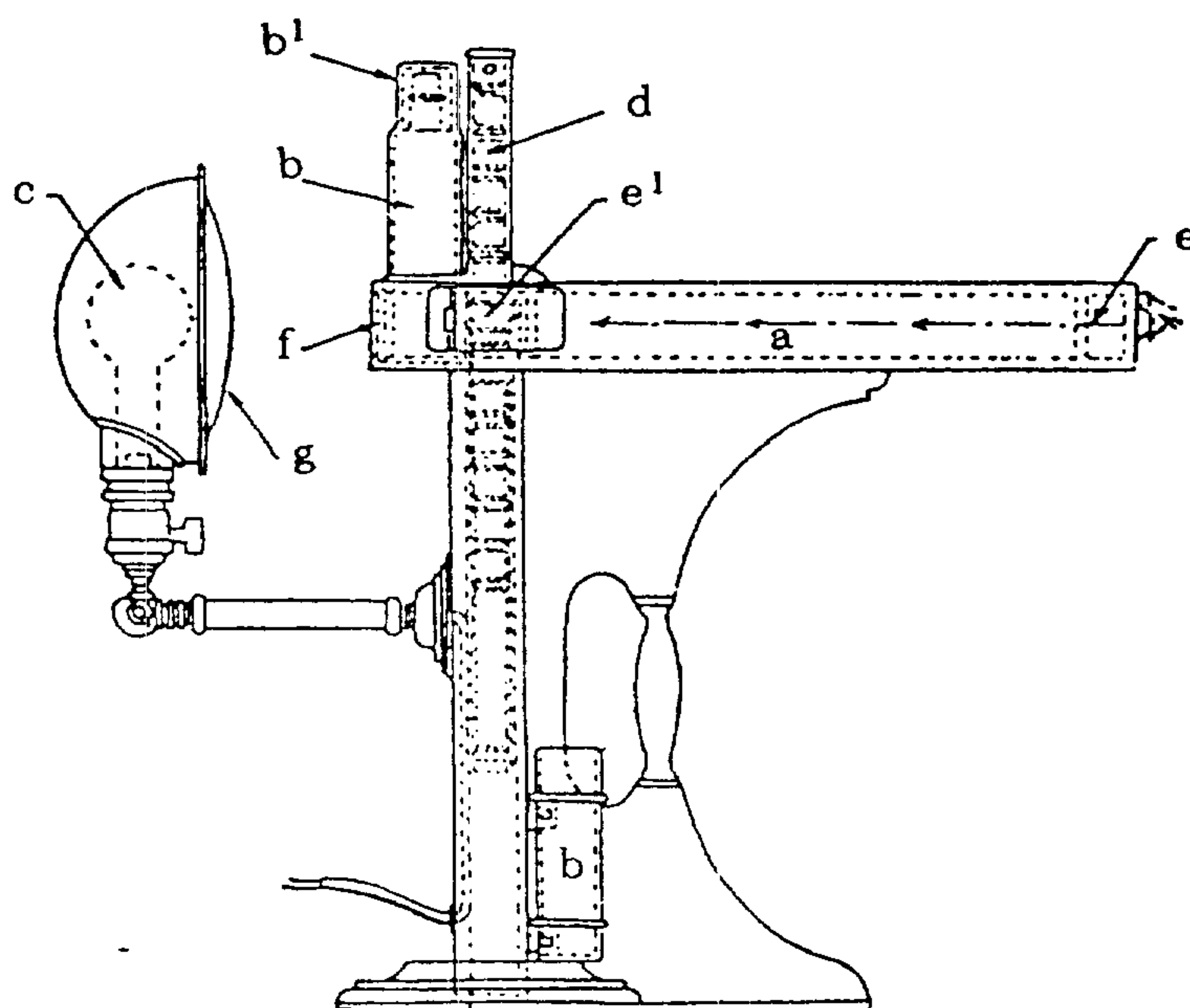


Figure 1. Example of union colorimeter

Unit : mm

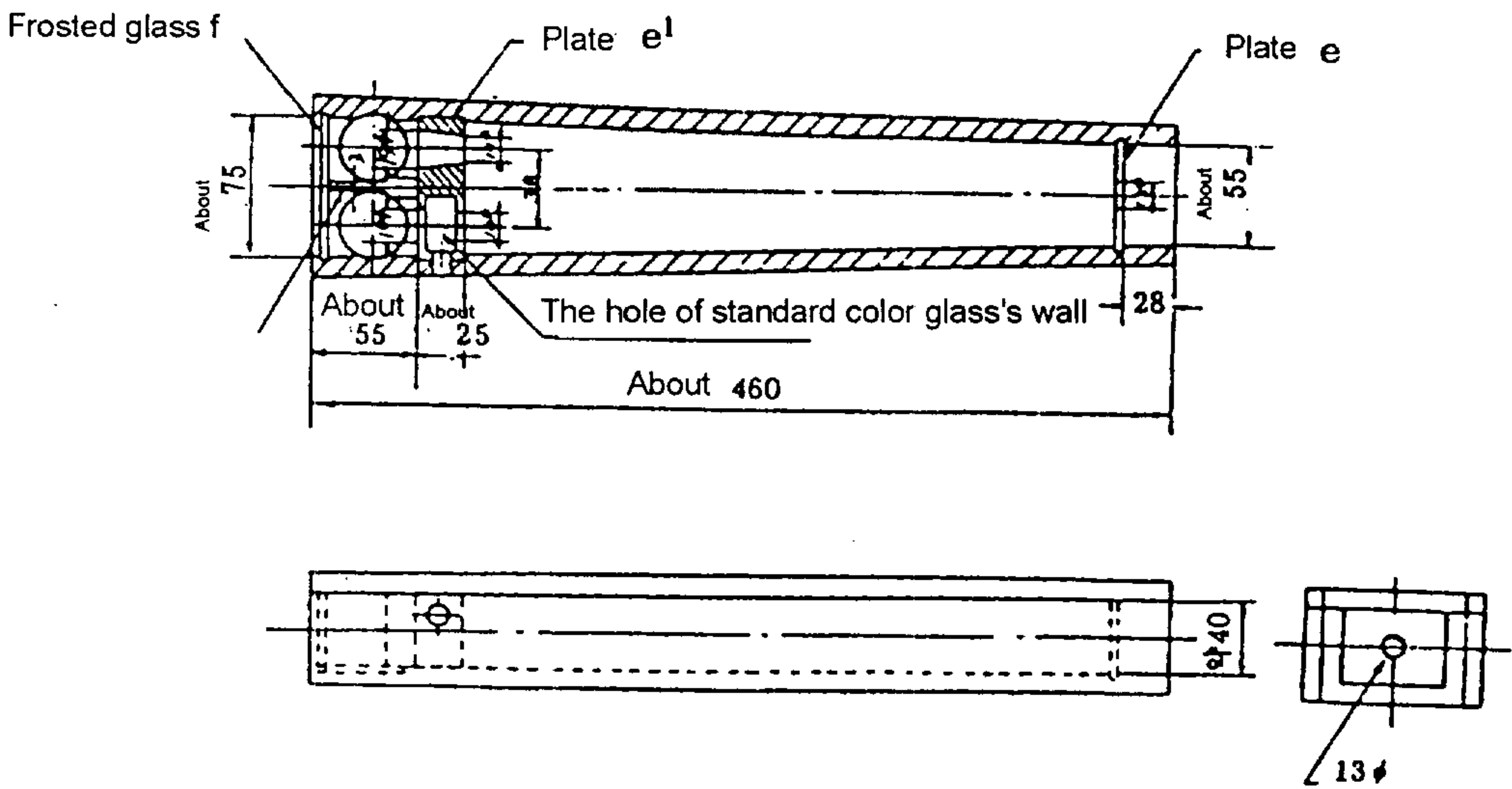


Figure 2 Dark box