

reach practical cut-off between 1 and 3 degrees outside the prescribed sectors.

(2) For sternlights and masthead lights and at 22.5 degrees abaft the beam for sidelights, the minimum required intensities shall be maintained over the arc of the horizon up to 5 degrees within the limits of the sectors prescribed in Rule 21. From 5 degrees within the prescribed sectors the intensity may decrease by 50 percent up to the prescribed limits; it shall decrease steadily to reach practical cut-off at not more than 5 degrees outside the prescribed sectors.

(b) All-round lights shall be so located as not to be obscured by masts, topmasts or structures within angular sectors of more than 6 degrees, except anchor lights prescribed in Rule 30, which need not be placed at an impracticable height above the hull, and the all-round white light described in Rule 23(d), which may not be obscured at all.

(c) If it is impracticable to comply with paragraph (b) of this section by exhibiting only one all-round light, two all-round lights shall be used suitably positioned or screened to appear, as far as practicable, as one light at a minimum distance of one nautical mile.

NOTE TO PARAGRAPH (c): Tow unscreened all-round lights that are 1.28 meters apart or less will appear as one light to the naked eye at a distance of one nautical mile.

[CGD 81-008, 46 FR 62447, Dec. 24, 1981, as amended by CGD 94-011, 63 FR 5731, Feb. 4, 1998]

#### § 84.19 Vertical sectors.

(a) The vertical sectors of electric lights as fitted, with the exception of lights on sailing vessels underway and on unmanned barges, shall ensure that:

(1) At least the required minimum intensity is maintained at all angles from 5 degrees above to 5 degrees below the horizontal;

(2) At least 60 percent of the required minimum intensity is maintained from 7.5 degrees above to 7.5 degrees below the horizontal.

(b) In the case of sailing vessels underway the vertical sectors of electric lights as fitted shall ensure that:

(1) At least the required minimum intensity is maintained at all angles from 5 degrees above to 5 degrees below the horizontal;

(2) At least 50 percent of the required minimum intensity is maintained from 25 degrees above to 25 degrees below the horizontal.

(c) In the case of unmanned barges the minimum required intensity of electric lights as fitted shall be maintained on the horizontal.

(d) In the case of lights other than electric lights these specifications shall be met as closely as possible

[CGD 81-008, 46 FR 62447, Dec. 24, 1981, as amended by CGD 89-024, 55 FR 3947, Feb. 6, 1990]

#### § 84.21 Intensity of non-electric lights.

Non-electric lights shall so far as practicable comply with the minimum intensities, as specified in the Table given in § 84.15.

#### § 84.23 Maneuvering light.

Notwithstanding the provisions of § 84.03(f), the maneuvering light described in Rule 34(b) shall be placed approximately in the same fore and aft vertical plane as the masthead light or lights and, where practicable, at a minimum height of one-half meter vertically above the forward masthead light, provided that it shall be carried not less than one-half meter vertically above or below the after masthead light. On a vessel where only one masthead light is carried the maneuvering light, if fitted, shall be carried where it can best be seen, not less than one-half meter vertically apart from the masthead light.

#### § 84.24 High-speed craft.

(a) The masthead light of high-speed craft with a length to breadth ratio of less than 3.0 may be placed at a height related to the breadth lower than that prescribed in § 84.03(a)(1), provided that the base angle of the isosceles triangle formed by the side lights and masthead light when seen in end elevation is not less than 27 degrees as determined by the formula in paragraph (b) of this section.

(b) The minimum height of masthead light above sidelights is to be determined by the following formula:  $\tan 27^\circ = X/Y$ ; where Y is the horizontal distance between the sidelights and X is