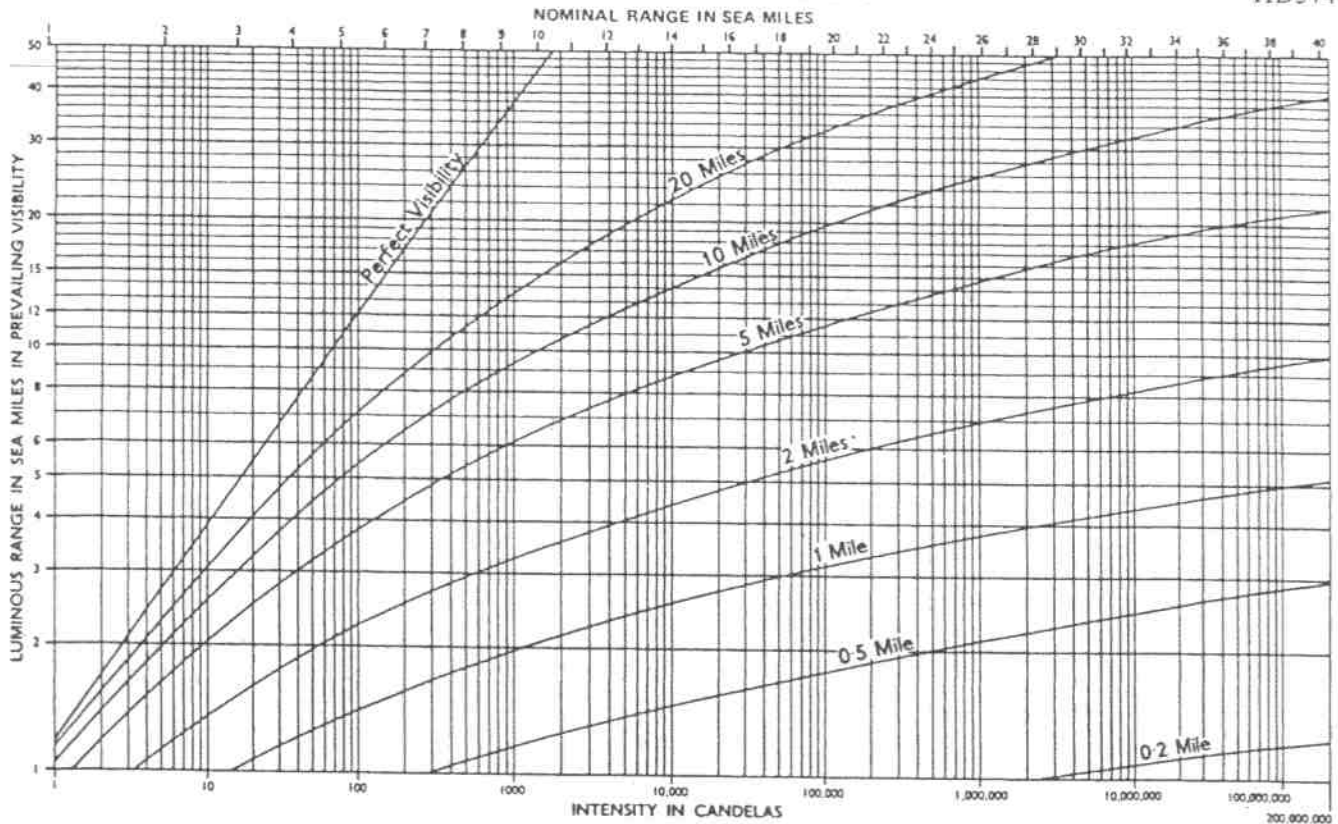


LUMINOUS RANGE DIAGRAM

HD574



Luminous Range Diagram.—This diagram enables the mariner to determine the approximate range at which a light may be sighted, at night, in the meteorological visibility prevailing at the time of observation.

The diagram is entered from the top border, using the nominal range listed in the body of the book, in column 6, or from the bottom border using the intensity from column 4 where listed. A list of those countries where nominal range is used will be found on page xxii. All other countries use luminous range for which the most commonly adopted meteorological visibility is 20 miles, equivalent to a transmission factor of 0.85.

The figures along the curves represent the estimated meteorological visibility at the time of observation, and those along the left-hand border the luminous range under those conditions.

Example: A light of an intensity of 100 000 candelas has a nominal range of about 20 miles. When the meteorological visibility is 20 miles the light would be sighted at about 33 miles, given a sufficient elevation and height of eye; and when 2 miles, at about 5½ miles.

As the scale along the top border is based on a meteorological visibility of 10 sea miles, the luminous ranges in the prevailing conditions obtained from the 10-mile curve will be identical to those with which the diagram is entered from the top border. If a line is drawn joining points where values from the left-hand border intersect equal values on the curves, it will be seen to be parallel with and to the right of the curve for perfect visibility. Luminous ranges in the conditions prevailing at the time of observation obtained from intersections to the left of this line will be less than the estimated meteorological visibility, whilst those to the right will be greater. Due to their intensity, many lights will therefore be sighted at a greater distance than that of the estimated meteorological visibility.

The diagram can also be used to obtain an approximate meteorological visibility; when, for example, a light of an intensity of 100 000 candelas is sighted at 12 miles, the meteorological visibility will be about 5 miles.

CAUTION.—When using this diagram it must be remembered that:

1. The ranges obtained are approximate.
2. The transparency of the atmosphere is not necessarily consistent between the observer and the light.
3. Glare from background lighting will reduce considerably the range at which lights are sighted. A light of 100 000 candelas has a nominal range of about 20 miles; with minor background lighting as from a populated coastline this range will be reduced to about 14 miles, and with major background lighting as from a city or from harbour installations to about 9 miles.

Approximate sighting ranges may be obtained by entering the diagram with the listed intensity divided by 10 for minor background lighting, and by 100 for major background lighting.