

*Tideland Signal Corp.*

*featuring Aids to Navigation Products*

## 1.4 Rotating Beacons

01	UPDATE	03.03.2008	CWQ
00	RELEASE	11.21.2007	CWQ
<b>Rev</b>	<b>Description</b>	<b>Date</b>	<b>By</b>

**Background:**

In the past, major land fall lights (lighthouses) were essential to the mariner for position fixing. With the development of increasingly universal carriage requirements for onboard radio navigation aids like GPS and radar, and the use of radar beacons, major AtoN lights have been relegated to a secondary role, providing visual corroboration of the more accurate and 24/7 available electronic position fixing navaids, especially at key landfall locations.

It is rare that there is an essential requirement for a luminous range of more than 20NM. This intensity of light has the advantage of producing a reasonable range light if background lighting presents a problem or in adverse weather conditions.

Many authorities are considering reducing a 20NM requirement to 15NM. It may also be possible to reduce the required intensity of a major AtoN light by co-locating it with a Racon that would provide 24/7 service, even during severe weather conditions.

Rotating beacons are ideal for Luminous ranges of over 12 – 13NM and can be powered by mains or solar power. Recent advances also permit the use of LED's in rotating beacons further improving efficiency.

**Operation:**

Rotating beacons light source is fixed with a configuration of condensing panels which is rotated to provide a choice of flash character by varying the number and relative position of translucent panels and the period or speed of rotation.

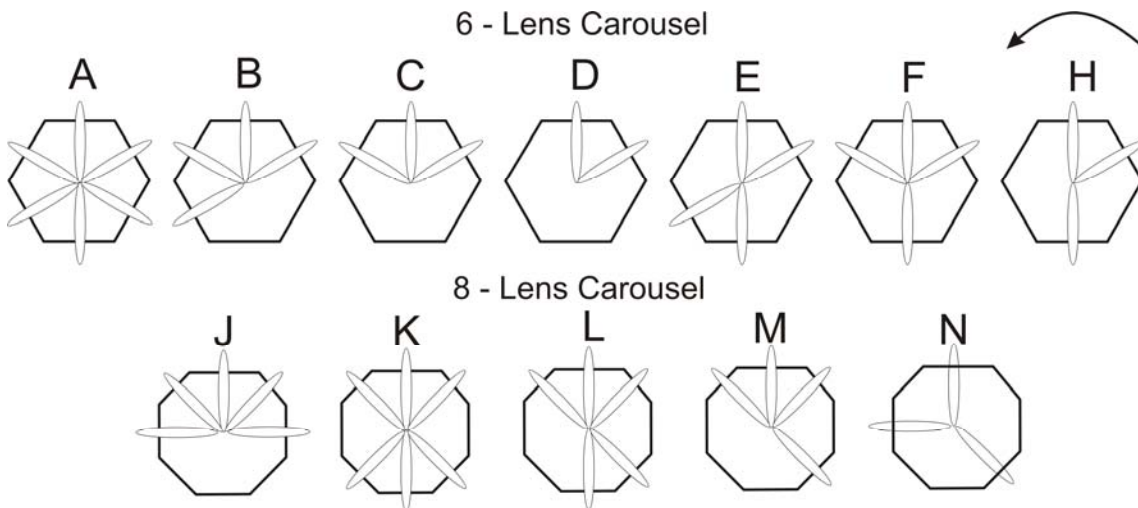


TRB-400



TRB-220

**Standard Lens/Blanking Arrangements**



## Options:

A 3-place lamp changer or a 6-place lamp changer with 3 lamps removed normally supports the fixed light source to ensure that it does not suffer from lamp shadow. Whilst a sunswitch controls the light source, it is customary, in sunny climates, to continue rotating the carousel during daylight hours, to prevent the condensing panels focusing the sun's rays onto the rotating beacon control electronics, thereby causing damage.



LC-70 lampchanger utilises a 70 watt High Intensity Discharge (HID) Metal Halide lamp that produces a light source with a range in excess of 24 NM when used in the TRB-400 MaxLumina® Gearless Drive Rotating Beacon.



A more modern alternative is to utilise LED technology which reduces maintenance requirements and also provides a more efficient system which is especially desirable for solar powered systems.



With its light source burning during night time hours and its motor and carousel running constantly, a rotating beacon is relatively power hungry. When AC power is not available, a large DC power system may be required, adding significantly to the cost of installation and ongoing maintenance. Such costs can be greatly reduced by using the lowest rated lamp for the required intensity and by choosing white instead of coloured lights.

With intensity a function of the duration of flash and lamp size, and the duration of flash dependent on the speed of rotation, selecting a flash character that requires a period of rotation, longer than 30 seconds, may also make it possible to minimise lamp size.