Greenfinder
Going Forward

The GreenFinder Rotating Beacon (MK2000 Series) is a powerful, reliable and compact marine rotating beacon suitable for ranges from 20 to 25 nautical miles.

GreenFinder's LED Marine Rotating Beacon (MK2000) is the natural upgrade for anyone operating a historic incandescent rotating beacon in a lighthouse.

The heart of the MK2000 are the high LED projector which rotate on a turntable powered by the gearless and brushless revolving pedestals. Speeds from 1 to 6 RPM can be selected.

The LED projector which able to reach up to 25 nautical miles. It is made up of optical panels with LED projector elements arrayed in one or two columns per panel depending on the configuration. MK2000 comes with a standard main and standby light.

MK 2000 utilizing PLC (Programmable Logic Controller) for its control system. This type of controller is being used widely in the industrial automation environment worldwide.

The high power LEDs shine further than incandescent bulbs, while using a fraction of the power. With a rated LED life of over 70,000 hours, costly visits to replace bulbs are a thing of the past.

MK2000 can be customised through the use of blanking panels to provide more flash character options than traditional rotating beacons.

Features:

☑ LED light source are designed to maintain the LED manufacturers' stated Lumen Maintenance of 70% to 60,000 hours or better life time.

☑ High-efficiency luminous system. Up to 25 nm (T=0.74)

☑ Up to 12 nos. reflectors per panel. Configurations according to customer's requirement.

☑ Triple redundant safety system. Main, Standby and Emergency lantern configuration. Emergency lantern shall be supply as optional.

☑ Electronic, gearless and brushless double motor with 1 to 6 RPM rotation speed.

☑ Automatic switch-over to standby motor in case of main drive failure.

☑ Photocell-control with or 24h-rotation selection. If photo-cell failed, dawn and dusk time shall be calculated based upon GPS location.

☑ Status and alarms ready for remote monitoring and control, by opto-isolated signals.

Monitoring:
The MK2000 can be monitored in a number of ways:

☑ eNav.my internet monitoring unit via GSM telemetry or AIS ATON

☑ GreenFinder AuroraOne AIS Remote Monitoring System

☑ GreenFinder Mobile Interrogation Monitoring (Android)

TECHNICAL DATA

OPTICAL SPECIFICATION

Light Source	High-intensity LED light source. High-efficiency acrylic reflectors, with dioptric and catadioptric elements.
Colour Available	White, Green, Red; contact GreenFinder for other colors
Peak Intensity	Appendix G IALA Recommendation E-122(2001) & E-200-3 Part 3 (2008)
Beam Divergence	Up to 10° vertical and horizontal, measured at 50% of specified intensity
Flash Character	Dependent on panel configuration and rotation speed
Color temperature	5500K – 6000K
Range	20nm to 25nm @ T=0.74

ELECTRICAL SPECIFICATION

MK180W/200W/250W/600W LED Projector

- Supply Voltage	240VAC
- Power	180 or 600 Watt per LED projector. Configurable to suit application
- Cooling System	Heat pipe radiator with cooling fans

Drive Motor

- Operating Voltage	8-15 VDC
- Power Consumption	450mA

Day / Night Transition — Photo sensor located on side of beacon and triggered when visibility is less than 300 lux. If photo-cell failed, dawn and dusk time shall be calculated based upon GPS location.

ENVIRONMENTAL

Operating Temperature	-20°C ~ +55°C
Storage Temperature	-30°C ~ +70°C
Humidity	95% relative humidity at 40°C

MK2000 Installed at
Bukit Segenting Lighthouse

MK2000 Installed at
Pulau Undan Lighthouse

MECHANICAL SPECIFICATIONS

Rotating optical housing

- Material	Aluminum – anodize (Black matte finishing)
- Net weight	42 kg
- Size	700mm x 600mm

1KZ2000 Dual Drive Motor

- Consist of motor 1 and motor 2 in single axis
- Brushless gearless DC motor
- Precision balance mechanical setup
- Microprocessor control driver with optical encoder for precise control
- Automatic function

- Weight	38 kg
- Size	450mm x 450mm x 300mm
- Speed setting	1-6 rpm speed range

MK 2000A Controller

The Controller has advanced monitoring capabilities utilising alarm relay, RS232, RS422/485 and WIFI to monitor;
- LED status
- Power supply
- Temperature
- Light levels
- Internal fault conditions
- Turntable rotation speed

Rotation control (automatic switch-over to standby motor in case of main drive failure).
- Luminous system control.
- Photocell control.
- Remote monitoring signals.

LED Status Indicator

a. Main Light Condition: Normal/Fail
b. Main Light Status: On/Off
c. Standby Light Condition: Normal/Fail
d. Standby Light Status: On/Off
e. Emergency Light Condition: Normal/Fail
f. Emergency Light Status: On/Off
g. Rotation Drive No 1: On/Off
h. Rotation Drive No 1 (Speed/character): Normal/Fail
i. Rotation Drive No 2: On/Off
j. Rotation Drive No 2 (Speed/character): Normal/Fail
k. Hatch Door: Close / Open
l. Main Power: On/Off
m. Battery Management System (BMS) Condition: Normal/Fail
n. Power Supply Status: Digital Supply for Incoming Voltage

Aurora Two AIS ATON Interface Unit

- Status and alarms ready for remote monitoring by 17 isolated control output for alarm indication (default) or other control usages. Default alarm type is shown at LED Status Indicator