



Vega *guides the way*

PROJECT REVIEW

BARNEGAT LIGHTHOUSE 150TH ANNIVERSARY

6-PANEL ROTATING BEACON – NEW JERSEY 2008

THE LIGHTHOUSE HISTORY

Located at the northern end of Long Beach Island in New Jersey, the Barnegat Lighthouse has had a long history. A lighthouse was first established there in 1835 and the existing structure was completed in 1859. Despite significant sand erosion in that area of the New Jersey coast, the structure, fondly known by locals as “Old Barney”, has stood ever since.

Barnegat Lighthouse originally used a first-order Fresnel lens which served until 1927, when the lighthouse was decommissioned and replaced by a lightship 8 miles offshore which was taken out of service in 1966.

VEGA'S SOLUTION

In 2008, Vega Industries was approached by the non-profit group, Friends of Barnegat Lighthouse, to quote for a new light which they would install for the 150th anniversary of the lighthouse in January 2009. A multi-tier VLB-44 LED beacon was considered, but the VRB-25 was finally selected because a revolving beacon would closely reproduce the flash of the original light.

The Friends of Barnegat Lighthouse group raised funds for the new beacon through a combination of membership dues, public donations, and by selling



certificates saying "I climbed Old Barney" for a dollar each. In addition, Long Beach Township Fraternal Order of Police Lodge No. 5, which uses the image of the lighthouse in its uniform patches, made a large donation – doubling the money the Friends of Barnegat Lighthouse had raised and allowing for the lantern room glass to be replaced as well.

The VRB-25 installed at Barnegat Lighthouse is a 6 panel unit, rotating at 1rpm which produces a flash once every 10 seconds, the same as the original light. The VRB-25 contains a 6 place lampchanger and uses 100W lamps with a range of 21.7 nautical miles.

Vega assisted the group with the registration of the new light as a private aid to navigation as required by the United States Coast Guard.

CELEBRATION

With thousands of onlookers watching, the light was activated at 5pm on New Year's Day 2009. The VRB-25's optical light sensor activates the new light each night at dusk. Once again, Barnegat's trademark signal of a white flash every ten seconds can be seen along the New Jersey coast.

(With thanks to Friends of Barnegat Lighthouse)

SPECIFICATIONS

Optics

Lenses	Six optical grade acrylic, 178.5mm focal length
Colours	Clear, Red (32%T), Green(34%T), Blanking Panel (0%T)
Service Life	Approximately 7 years

Motor Drive

Type	30-pole brushless three-phase direct drive
Current Drain	90mA continuous typical at 1rpm
Rotation Speeds	248 user-selectable speeds in range 0.5 to 15.9rpm
Speed Control	PID Controller, optical feed-back with 1200 pulses/rotation
Speed Variation	Less than 2% variation. Automatic torque compensation
Bearings	Two deep groove sealed ball races, 62mm diameter

Electronics

Power Supply	Nominal 12VDC, 11-30VDC acceptable
Controller	Vega CALC-20B (motor driver, lamp changer controller)
Lamp Voltage	Regulated to a maximum of 12V rms by PWM
Current	125mA for CALC-20B
Lamps	12VDC pre focused vertical filament to 100W
Lampchanger	Vega VLC-153 automatic 6-position, escapement type
Photocell	Built in, sensor compatible with USCG Type LDR
Monitoring	Fixed duration contact-closure twice per rotation

Environmental

Temperature	Rated for continuous operation -35°C to +60°C ambient
Salt	Rated for continuous exposure to salt air and sea water spray
Humidity	Rated for humidity 0-100%, driving rain at 45° from vertical
Wind	Rated to withstand winds to 100kt
Cooling	Natural radiation only, no cooling fan or ventilation required

Materials

Base	DT 5008 grade Aluminium, anodised to 25 microns
Glazing	Optical grade acrylic
Glazing life	Approximately 7 years
Paint Finish	Epoxy primer, 2-pot polyurethane gloss paint on exterior metal surfaces

