

**Vega** *guides the way*



# VLB-44 LED MARINE BEACON

MEDIUM RANGE BEACON 6-14NM (1-8 TIERS)



6NM to 14NM at 0.74T  
Options of 2.5°, 5° or 10° Vertical Divergence



ISO 9001

**BUREAU VERITAS**  
Certification



# VLB-44 LED MARINE BEACON

The VLB-44 Beacon forms part of the Vega LED marine beacon family. The use of high efficient optics and electronics has resulted in energy efficiency as high as 175 Candela per Watt (depending on vertical divergence).

The low energy needs reduce the solar panel and battery requirements in a standalone application.

The Beacon comes in 3 models with different vertical divergence to cover applications from buoy to fixed installations.

- VLB-44 10 degree for buoys
- VLB-44 5 degree for land/pole use
- VLB-44 2.5 degree for lighthouse

The VLB-44 beacon is available from one to eight tiers and can be sized to the range of a particular application. Multiple units can be used to extend the range to 16NM. Each tier uses approximately 10 Watts of energy. The available colours are: red, green, white, yellow and blue. All colours meet the IALA chromaticity recommendation.

The unique optical system utilises an acrylic lens to maximise the light capture from the LEDs. The LEDs are precisely graded and placed to produce a light beam with minimum variation in intensity. A switch mode regulator maintains the light output of the LEDs independent of input voltage and temperature.

All VLB-44 Beacons are tested in the Vega zero range light tunnel prior to shipment to ensure the light output meets the required specification.

Programming of the VLB-44 could not be easier. Each beacon has up to 15 programmable effective intensity options. Where flash characters are used automatic Schmidt-Clausen correction occurs to increase the peak intensity to maintain the effective range of the beacon. The output intensity cannot exceed the maximum intensity of the tier/colour combination.

Programming is done using Vega IR programmer.

Additional options include:

- External GPS sync using the Vega VSU-29 unit.
- VegaWeb web or SMS based monitoring system.

## SPECIFICATIONS

### Optical Performance

The maximum Candela from a single tier VLB-44 is as follows:

VD	Red	Green	White	Yellow	Blue
10°	670	440	520	380	140
5°	1040	720	1060	590	220
2.5°	1810	1510	1740	1204	-

Use multi-tier units (2-8 tiers) or multiple units to increase candela and range.

### Functionality

- Up to fifteen effective intensity settings for every tier/colour combination.
- Automatic Schmidt-Clausen intensity correction up to the maximum intensity of the tier/colour combination
- Colours meet the IALA chromaticity requirement
- Candela output reduces at higher temperatures
- Vertical Divergence Options of 2.5°, 5° and 10°
- 246 standard flash characters and one programmable custom character
- 20 factory set custom flash characters
- Flash synch delay from master up to 9.9 seconds
- Nine Lux levels to determine day/night transition, IALA recommendation included
- With hard wire sync can operate as a master or slave
- Sync delay up to 9.9 seconds
- Programmable low voltage cutout threshold
- Programmable storage and test mode
- Optional security code for programming
- Features are programmable using Vega IR programmer
- Light output based at the 10% Percentile (IALA E-122)
- Horizontal tolerance in the focal plane +/-15% from the mean.

### Optics

Light Source	High-Intensity Light-Emitting Diodes, exact number varies with colour and model
Lens	Acrylic, UV-protected
Construction	
Rated Intensity	Measured at the 10% percentile in accordance with IALA recommendations
Horizontal Fan	360° fan beam, tolerance ±15% mean

Vertical Divergence	2.5° ±1.25° at 50% peak and ± 3° at 10% peak 5° ±2.5° at 50% peak and ±5° at 10% peak 10° ±5° at 50% and ±10° at 10% peak
Colours Available	red, green, white, yellow (blue on request)
Chromaticity	All meet IALA recommendations for signal colours
Service Life	Greater than 10 years depending on flash character and duty cycle

### External Inputs

Synchronisation	Negative going pulse at start of character, programmable delay
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### Electronics

Power Control	Continuous, based on intensity and temperature
Photocell	Internal with 9 selectable threshold levels for day/night transition
Light Output	Output maintained by micro processor control from -30°C to +60°, output reduces above 60°C
Synchronisation	Wired sync standard, delay up to 9.9s in 0.1s step
Reverse Polarity	Internally protected against reverse polarity connection

### Power Requirements

Input Voltage	Nominal 12VDC
Maximum Ratings	11-18V from regulated DC supply. Transient protection built in
Power	Typically a maximum of 10W/tier at 12VDC
Quiescent Current	0.5mA daytime, 4mA for night "off" segments; For the on currents at various intensity settings refer to Appendix A of the product manual.

### Enclosure

Material	DT 5008 Marine Grade Aluminium, anodised to 25µm
Paint Finish	Epoxy primer, 2-pot polyurethane gloss on exterior



Bird Spikes Stainless steel  
Sealing Sikaflex sealant on lens,  
O-rings on metal parts

15kg for 8 tier beacon  
Warranty 1 year. Refer Vega  
warranty conditions

## Environmental

Vibration MIL-STD-202G Method  
204D, Cond B  
1G (5Hz to 40.8Hz, xyz  
axis, 1 octave/min)  
5G (40.85Hz to 2000Hz,  
xyz axis, 1 octave/min)  
Tested at -20°C

Shock MIL-STD-202G Method  
213B, Cond H  
75G, xyz axis  
Tested at -20°C

Immersion MIL-STD-202G Method  
104A, Cond A  
IP68, 1.5m for 60 minutes

## Electrical

47 CFR FCC Part 15 Subpart B: 2009;  
EN 55015:2006+A2:2009 (Disturbance  
voltages); EN 61547:1995+A1:2000  
(Radiated disturbance 30MHz to 300MHz)  
IEC 61000-4-2: 2008, Level 3  
(Electrostatic discharge immunity);  
IEC 61000-4-3: 2006+A1:2007, 3V/m  
(Radiated, radio frequency, EF immunity);  
IEC 61000-4-5: 2005 (Surge immunity)

## Temperature

Tested -30°C to +50°C. Output reduces at  
high temperatures to protect LEDs

Salt Rated for continuous  
exposure to salt water  
and spray

Wind Rated to withstand winds  
to 100-kt

Cooling Natural radiation only  
Ice 22kg/m2

## Weight

3.5kg single tier, 9.4kg for 6 tier and

## DIMENSIONS

Label	Description
A	Height (see table)
B	Photocell & program window
C	3 mounting bushes Ø15 hole on 200PCD
D	Cable gland (M20 or M16)

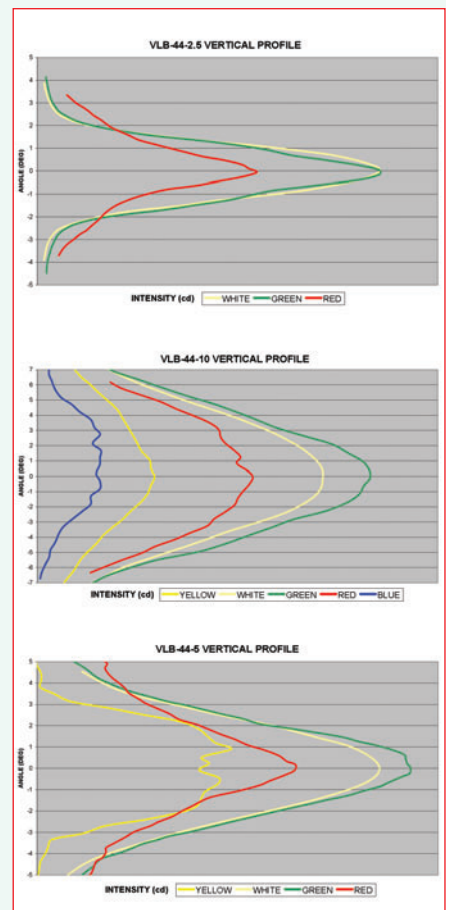
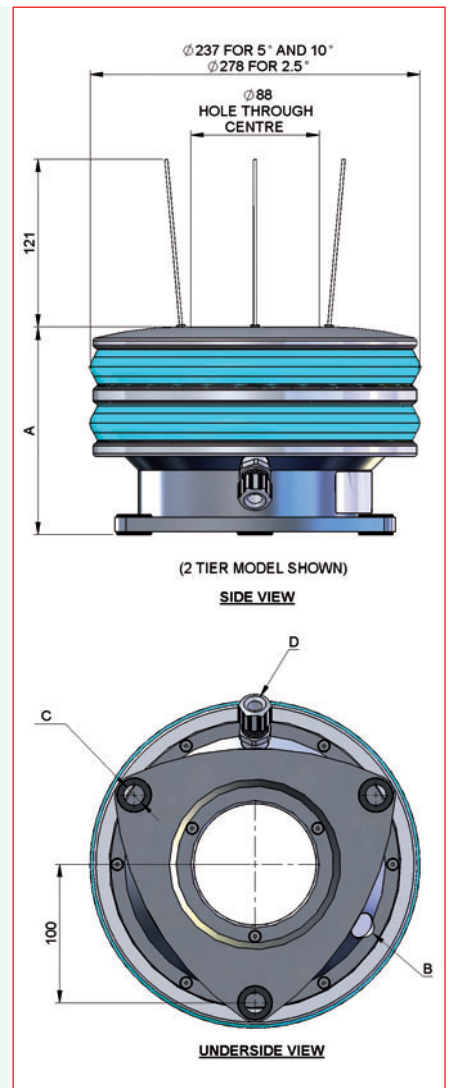
### 5" & 10" Version

No of Tiers	Height (mm)	Focal height (mm)	Bare weight (kg)	Shipping Volume (M³)	Shipping Weight (kg)
1	111	80	3.7	0.011	4.5
2	151	100	5.8	0.031	11
3	191	120	7.9	0.031	13
4	231	140	10	0.031	15.5
5	271	160	12.1	0.031	17.5
6	311	180	14.2	0.041	20
7	351	200	16.3	0.041	22
8	391	220	18.4	0.041	24

### 2.5" Version

No of Tiers	Height (mm)	Focal height (mm)	Bare weight (kg)	Shipping Volume (M³)	Shipping Weight (kg)
1	111	80	4.2	0.041	10
2	151	100	6.7	0.041	12
3	191	120	9.3	0.041	15
4	231	140	11.8	0.041	17
5	271	160	14.4	0.041	20
6	311	180	16.9	0.056	22
7	351	200	19.5	0.056	25
8	391	220	22	0.056	27.5

**Built of marine grade aluminium alloy the VLB-44 beacon provides good heat sinking for the high-powered LEDs, as well as having high strength and impact resistance. Various mounting options are available including 3-hole and 4-hole.**



## PARTS FOR ORDERING

### DESCRIPTION

VLB-44 LED BEACON (2.5°, 5°, 10°)

### CODE

VLB-44-ccc-v-tT-HH

**Note:** v = vertical divergence, options are 2.5, 5, and 10 degree.

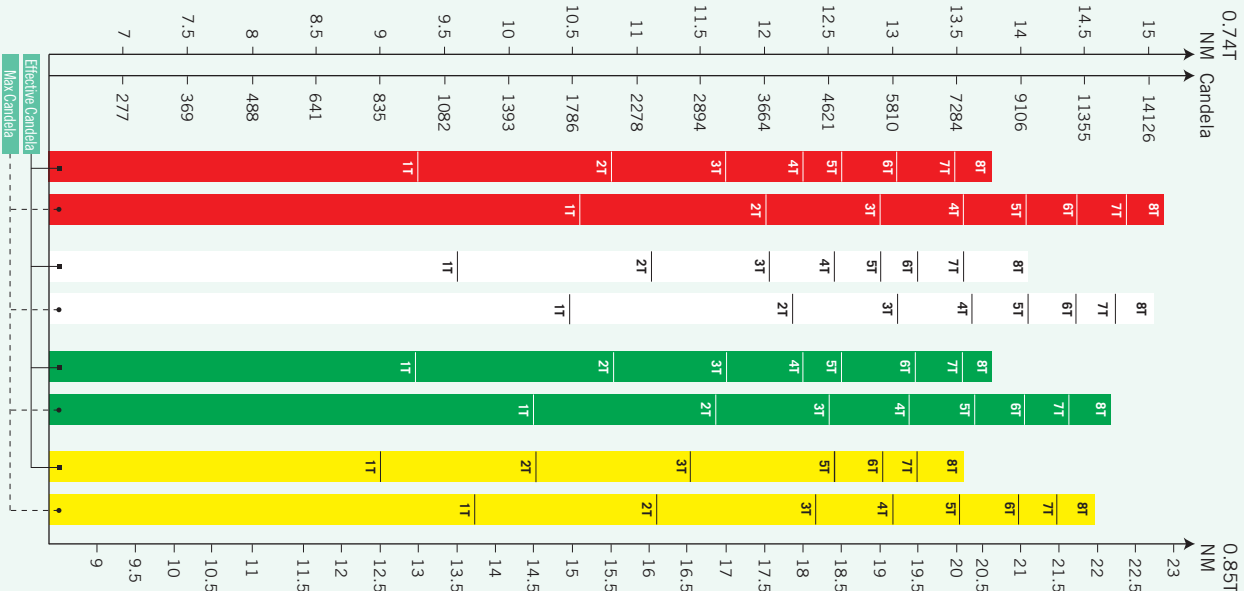
ccc = beacon colour, options are red, grn, wht, and yel. (blue available on request)

t = number of tiers, options are 1 to 8.

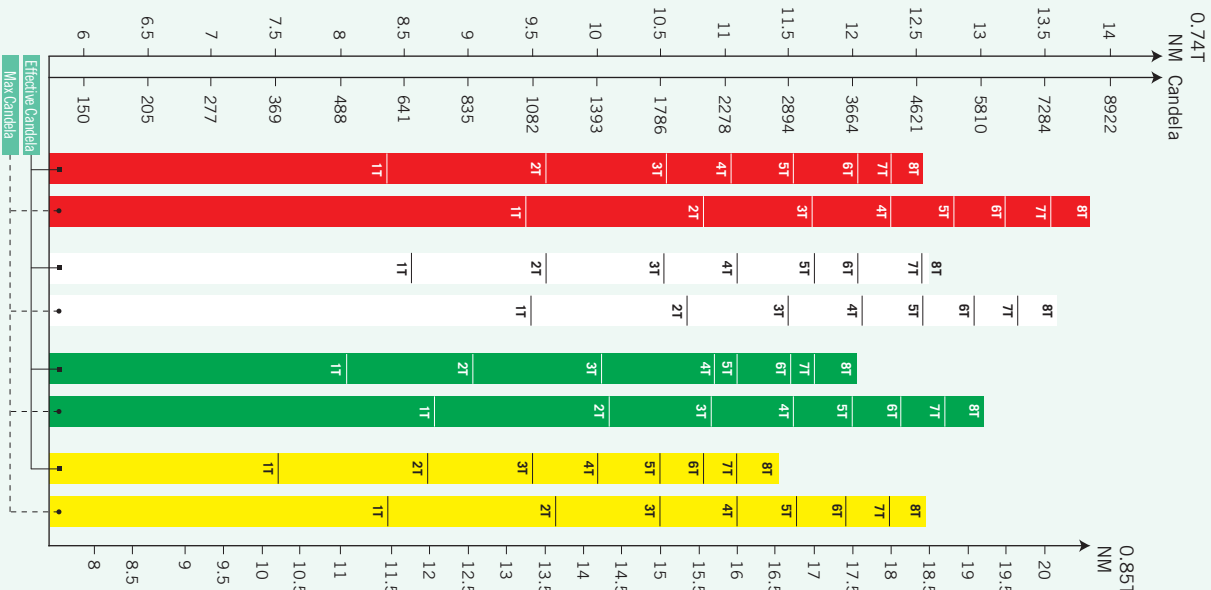
h = number of mounting holes, options are 3 or 4.

For example: To order a VLB-44, 5° vertical divergence, white, 4 tier, 3 hole base the order code would be: VLB-44-WHT-5-4T-3H

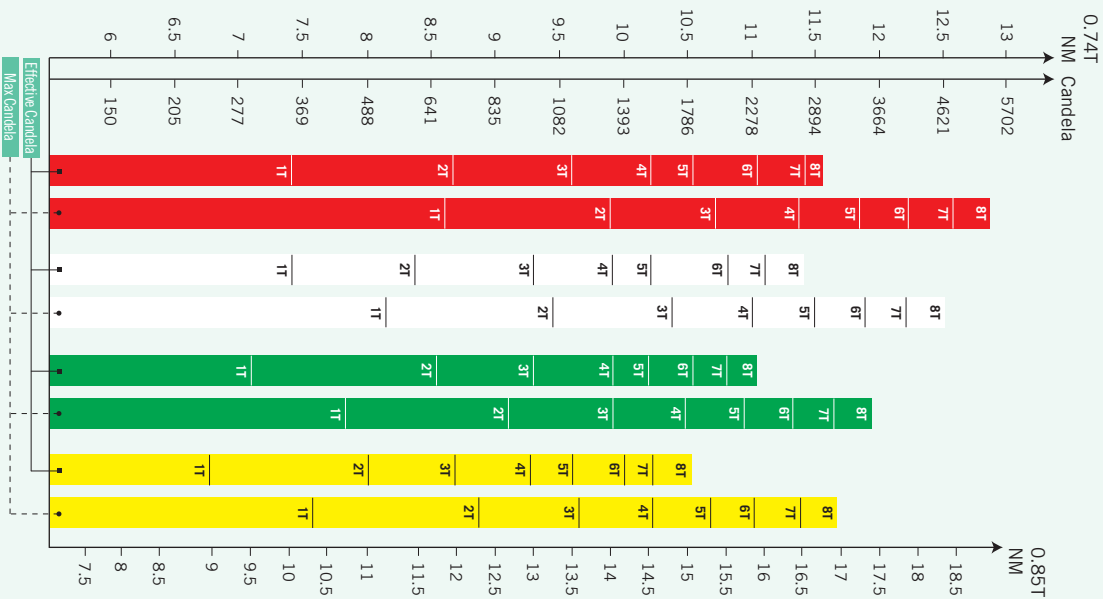
## VLB-44/2.5° NIGHT RANGE BEACON SELECTOR



## VLB-44/5° NIGHT RANGE BEACON SELECTOR



## VLB-44/10° NIGHT RANGE BEACON SELECTOR



DISTRIBUTOR

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### Notes:

- To select how many tiers are required
- Use table with required vertical divergence 2.5, 5, or 10 degree;
- For required range at 0.74T or 0.85T select the minimum number of tiers using the Effective Candela;
- Check if more tiers are required for particular flash character by:
- (a) Calculating Schmidt-Clausen factor: (flash on period + 0.2) / flash on period;
- (b) Multiply the candela shown for the range by the SC factor;
- (c) Using the calculated candela check number of tiers required from the Max Candela column.

**Example:** Want red 2.5 degree 10NM light at 0.74T with 0.2s flash

- On range basis 2 tier unit required;
- SC factor =  $(0.2 + 0.2) / 0.2 = 2$ ;
- Required candela =  $1393 \times 2 = 2786$ cd. 2 tier unit could do application.