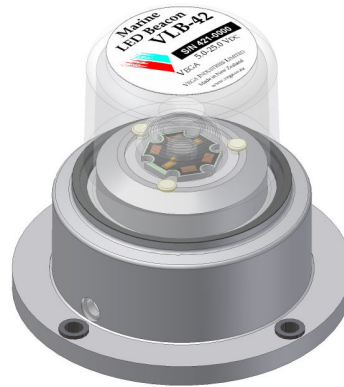


VLB-42

Marine LED Beacon

2-3 mile range

VEGA



VLB-42 6V
Part no: 142-000S

VLB-42 Marine LED Beacon

This is a simple, fully programmable, flashing beacon for ranges of 2 or 3 NM. Utilises a single LED coupled to a radical new optic to give an all-round fan beam of uniform intensity and divergence with very high-energy efficiency. Models are suitable for buoys, pile structures and marine farms.

- 17 cd effective intensity (3 NM), typically 1.3 Watt peak power, and 6 cd intensity for 2 NM
- automatic short flash compensation to maintain range with short duration characters
- most models have a solar charge regulator, synchronisation capability, daylight sensing from a connected solar panel and a coded flash output for battery voltage test
- most models are programmable using an infrared remote
- operates from a range of DC voltages
- fully sealed light - no maintenance required, - intrusion protection rating to IP 67
- options include a fixed light source only and a larger base mounting
- one model has daylight sensing with a photo-sensitive LDR, without a solar charge regulator

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Designers and manufacturers of lighted navigational aids and optical, electronic and electro-mechanical instruments

Part number: 142-000S VLB-42 6V (white pictured)



This is a nominal 6V unit (voltage range 5.0 – 9.0VDC) that is programmable to be either 2 or 3 NM with transmissivity factor $T=0.74$. It is designed to operate very efficiently off a 6 Volt battery. It automatically adjusts the intensity to maintain the same range independent of the flash character. Solar panels and batteries are not included. There is a built in solar charge regulator, rated up to 2 Amps. Day and night detection relies on the voltage measured from the external solar panels or daylight switch. Program the unit by using the Vega infrared remote control (part no: Remote-02). This is the most energy efficient of the VLB-42 models available. Mounting is by four M5 bolts on an 80mm pitch circle diameter (PCD). Focal height is 46 mm from the base.

Part number: 142-001S VLB-42 6 or 12V (red pictured)



Similar to the VLB-42 6V model but is a nominal 6V or 12V unit that can operate over a supply voltage between 5.0 – 25.0VDC. It is designed for use in existing 12V installations. It is approximately 7% less efficient, with higher power input for same output intensity than the VLB-42 6V model. This beacon will automatically set itself to operate from either a 6V or 12V supply, depending on measured battery voltage. If you have a 6V battery and a 12V solar panel connected, the inbuilt solar charge regulator, rated at 2 amps, will correctly charge the 6V battery and the solar panel acts as day/night sensor. A 6V solar panel will act as day/night sensor by measuring the voltage level from the panel, but cannot charge a 12V battery if connected. Mounting is by four M5 bolts on an 80mm PCD. Focal height is 46 mm from the base.

Part number: 142-002S VLB-42 6 or 12V LDR (not shown)

Similar to the VLB-42 6 or 12V model. An in-built light dependent resistor (LDR) is the day/night sensor, through a second miniature window in the base. This beacon does not have a solar charge regulator. Mounting is by four M5 bolts on an 80mm PCD. Focal height is 46 mm from the base.

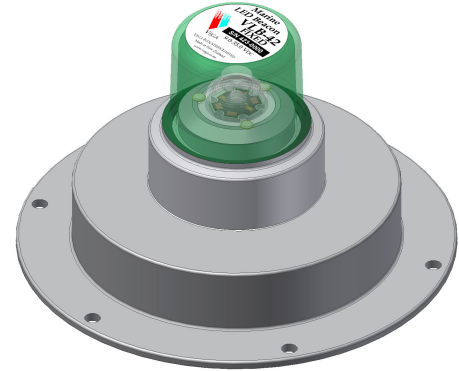
Part number: 142-003S VLB-42 Fixed 9.0-35.0V (green pictured)

This beacon has a fixed character. Power on = Light on. It is not programmable so requires an external daylight switch or solar panel for day/night sensing and an external flasher. This model has a 9.0 – 35.0VDC operating range. It is designed for 1 - 3 NM range, depending on the colour, settings and LED power rating. The intensity output is factory set. It can be used on a 12VDC supply with the Vega VLF-43 Lead Light Flasher unit when day/night switching and a flash character are required. Mounting is by four M5 bolts on an 80mm PCD. Focal height is 46 mm from the base.



External Accessories

- To operate any VLB-42 beacon from a 110V or 240V AC supply use an external AC to DC converter with a well regulated output of the required DC voltage and current connected to the battery input cables.
- To sense the day/ night change on the solar panel positive wire, either a low voltage solar panel can be used or an external daylight switch with voltage free contacts, closed for day, open for night.
- A larger diameter plastic base mounting plate can be factory fitted to mount these beacons on a 170 mm diameter casting. There are six equally spaced mounting holes Ø6.35 mm (¼ inch) on a 157 mm pitch circle diameter. The original fitting is of French origin.



Part number: Remote-02 Vega Infrared Remote Control

The remote control unit is used with the programmable models of the VLB-42. Features of Remote control - In addition to setting the range and the flash character, the programmer can also adjust the day/night detection sensitivity. Commands can signal the battery voltage with coded flashes, set beacon in test mode, and set the beacon to be programmed at any time or only during daytime.



Specifications

VLB-42 Programmable or Fixed LED Beacons

Optics

Light Source	High-Intensity Light-Emitting Diode, with Service Life of 10 years		
Lens	Acrylic, UV-protected, Beam 360° horizontal spread		
	Vertical	±4° spread at 50% and ±11° spread at 10% for red and yellow ±3.5° spread at 50% and ±10.5° spread at 10% for green and white	
Colours Available	Red, Green, White, Yellow (All meet IALA recommendations for signal colours)		
Chromaticity	Red	0.68<x<0.71, 0.29<y<0.31	White x=0.31, y=0.32
Co-ordinates	Green	0.09<x<0.13, 0.53<y<0.65	Yellow x=0.57, y=0.43

Electronics

Power Control	<i>(Day/night detection and synchronization not available with VLB-42 Fixed 9-35V model)</i> Continuous, based on range selection and temperature		
Day/night detection	Determined by connected solar panel voltage, or external daylight switch, or for model 142-002 6 or 12V LDR, with built in light dependent resistor.		
Light Output	Independent of temperature and battery voltage but subject to LED current limit		
Synchronisation	Hard-wired sync built in, 10ms input required from volt free contact closure		
Reverse Polarity	Internally protected against reverse polarity connection		

Power Requirements

Input Voltage (DC)	<i>(selected model dependent)</i> VLB-42 6V (5.0-9.0 V) or VLB-42 6or 12V (5.0-25.0 V) or VLB-42 Fixed (9.0-35.0 V)		
Maximum Ratings	As indicated above from well-regulated DC supply. Transient protection built in.		
Maximum Power	1.3W at 6VDC or 1.5W at 12VDC for a range setting of 3NM.		
Solar Panel input	Nominal 6V or 12V solar panel, up to max. 2 amps charging current (not model 142-002)		
No. of Range Steps	Two (2 NM and 3 NM)		
Quiescent Current	0.3 mA daytime, 4 mA for "off" segments. Extra using optional external GPS sync.		

External Input/Output

Synchronisation	<i>(not for VLB-42 Fixed 9-35V model)</i> 10ms pulse input sets start of character, voltage free normally open contact closure		
Battery voltage	Coded flash output, measurement tolerance ± 4%. Battery condition is temperature dependent		

Enclosure

Material	Marine Grade Aluminium, anodised to 12µm. Acrylic top cover. Fibreglass for solar pack		
Sealing	Polyurethane sealant and O-rings for metal parts		
Pressure Equalisation	Membrane port allows air exchange, blocks moisture		

Environmental

Acceleration	Rated to 5g in all directions		
Temperature	Tested -30°C to +60°C. Intensity output reduces at high temperature to protect LED		
Salt	Rated for continuous exposure to salt water and spray		
Wind	Rated to withstand winds to 100+ knots		
Cooling	Natural radiation only		
Intrusion Protection	IP 67 rating, 30 minutes immersion at 1 metre head of water for beacon head		

Dimensions

Focal Height	<i>(selected model dependent)</i> VLB-42 6V, VLB-42 6or 12V, VLB-42 Fixed 9-35V, 46mm.		
Beacon	VLB-42 6V, VLB-42 6or 12V, VLB-42 Fixed 9-35V, 89mm diameter. x 71mm high		
Bare Weight	VLB-42 6V, VLB-42 6 or 12V, VLB-42 Fixed 9-35V, 300 g with 1m cable attached,		

Infra Red Programmer

Coding Scheme	<i>(sold separately)</i> RC5 code with center frequency 36.7 kHz		
Programs	Flash Character, Intensity Output (for Range) and Day/ Night Threshold Sensitivity. Measurement of battery voltage. Sets beacon to test mode		
Dimensions	87mm x 41mm x 6.5mm, weight 18 grams		
Power Supply	1 x 3V lithium coin cell battery, CR2025 type		

Output Intensity

Range / Intensity - 2NM 6 candela, 3NM 17 candela, for T=0.74

Mounting Bolts

Size and quantities as described per model in this brochure