

# SB-138P Sentinel® Buoy



TIDELAND SIGNAL CORPORATION

The SB-138P Sentinel® buoy is a product of Tideland Signal's continued commitment in developing new higher performance, low maintenance, cost effective marine aids to navigation.

Deployed in over 50 countries, the SB-138P buoy utilises the benefits of the latest in materials, manufacturing processes and technology, which provides a rugged, lightweight buoy with exceptional station-keeping and long life, while reducing the long term maintenance expense of floating aids to navigation.

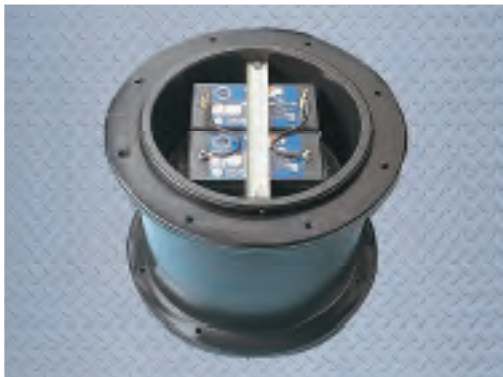
## FEATURES:

- **UV-STABILISED POLYETHYLENE** – Rotationally moulded to form a seamless body, 9.5 mm thick. Prior to moulding, colour pigment is blended into polyethylene material eliminating the need for costly sandblasting and continued painting. Through a unique mould design and a controlled process, an increased thickness is formed at major stress points. This rugged material will also repel marine growth.
- **DIVIDED INTO THREE SECTIONS** – A float section, battery section and navaid section – form an abrasion resistant, shock absorbing buoy able to withstand knocks and/or collisions.
- **MATCHING OR ALTERNATING SECTIONS** – Easily makes bifurcation buoys, either red or green as required. Cardinal buoys can be assembled using the same method with yellow and black sections. Fairway or Safe Water buoys are produced using a process of moulded in colour graphics, resulting in red and white vertical striping.

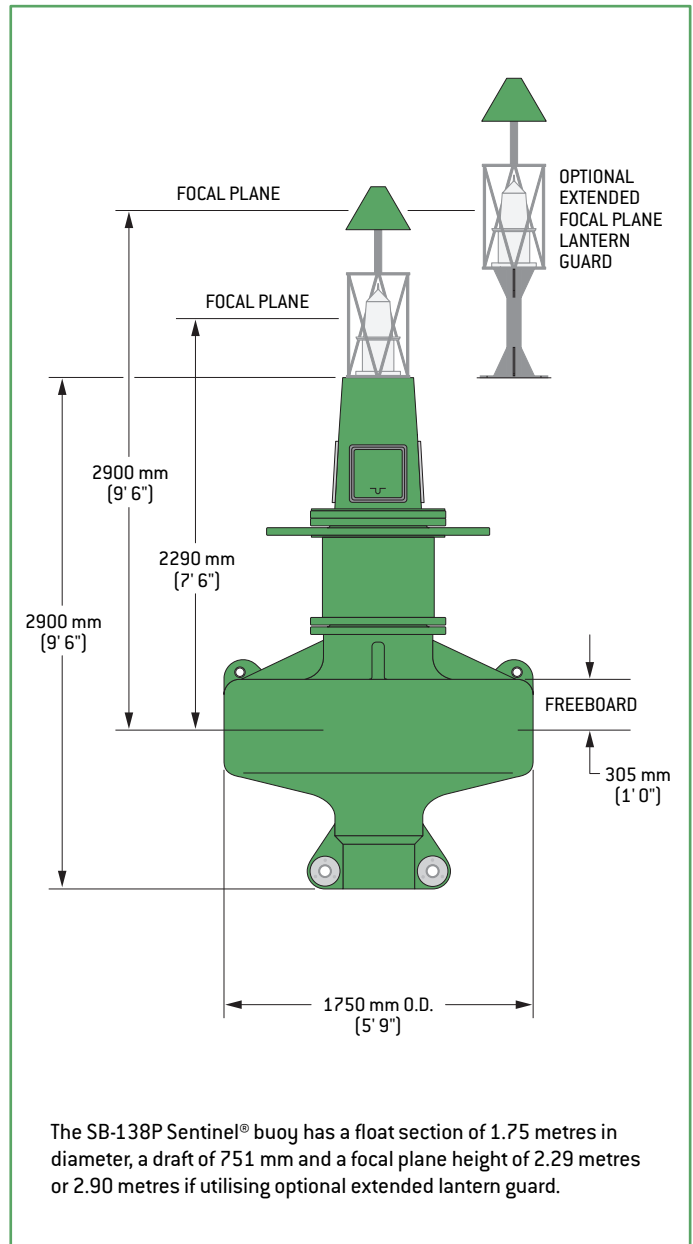


## FEATURES (cont):

- LONG-TERM STRENGTH AND SECURITY** – The float section is internally cross-braced with stainless steel rods that are connected to stainless steel bushings in mooring and lifting eyes. Mooring eyes are fitted with a replaceable stainless steel wear bushing.
- STABILITY** – Achieved by filling float section with a calculated amount of reinforced concrete as ballast. Then the entire float section is filled with polystyrene beads. The float is then sealed and placed into a steam-chest to expand the foam beads to maximum size, fusing the beads together. This process results in one solid piece of polystyrene completely filling all voids, preventing water ingress in the event of puncture, adding ruggedness to an already tough floating aid.
- POWER** – Configured for 12 volts, the power system for the lantern and optional equipment is housed in the battery section, which also forms part of the tower for the lantern, and above the waterline to avoid corrosion, vibration and battery spillage.
- NAVAID SECTION** – Has provision for four 10 watt solar modules or up to three 20 and one 10 watt solar modules. Configurations of solar modules can vary depending on electrical load and average solar insolation for area of deployment. This section also includes an internal high gain passive radar reflector (10m<sup>2</sup>) and hard-anodised lantern guard (if needed). Access to battery section and all equipment is through a hinged, tamperproof, watertight service hatch located in the navaid section.



The service hatch provides easy entry to energy cells. The battery section will hold one or two energy cells depending on power requirements. The entire power system is above the waterline and designed to avoid corrosion, vibration and battery spillage.



The SB-138P Sentinel® buoy has a float section of 1.75 metres in diameter, a draft of 751 mm and a focal plane height of 2.29 metres or 2.90 metres if utilising optional extended lantern guard.



### REPAIR KIT (optional)

Includes heat gun, UV polyethylene welding rods and spin-on patches for fast and easy minor repairs.

# STANDARD AND OPTIONAL EQUIPMENT FOR THE SB-138P SENTINEL® BUOY

**VHF RADIO ANTENNA (not shown)**  
Constructed from tough marine epoxy and stainless steel connectors, the antenna provides a strong, clear signal on all broadcast frequencies.

**GPS ANTENNA (not shown)**  
A marine grade antenna that is weatherproof and waterproof. Performance is enhanced using band pass filters to improve immunity to other RF signals and still provide 35-dB of signal gain.

**V-TRACK™ INFORMER™**  
Provides AIS equipped vessels with real time buoy information. AIS compliant display chart will receive buoy target flag along with navigational light data. Informer will broadcast an alert message if buoy goes off-station. Informer™ can also transmit remote monitoring information of Tideland Signal lanterns and also lanterns of other manufacturers.

**LIGHTNING PROTECTION MODULES**  
Protection at the antenna is accomplished with a gas capsule module or a quarter-wave tuned filter with TVS clamping devices. Robust lightning protection is available through the RMC-3 due to its design for extremely harsh environments.

**GPS MODULE**  
An internal GPS plug-in module provides 8-channel tracking while consuming only 0.47 watts with continuous operation. Further power savings can be gained by cycling power to the GPS module (0.08 watts).

**RMC-3**  
Tideland's newest technology for remote monitor and control functions is ideal for buoy applications due to its small footprint and low power consumption of < 1 AH per day. The RMC-3 is field upgradeable and can be polled or diagnosed on-station using a laptop computer.

**BRIDLE AND MOORINGS (not shown)**  
As required for various applications.

**TOPMARKS**  
IALA-recommended topmarks are rotationally moulded using the same compounded UV polyethylene as the SB-138P buoy.

**SEAHAWK™ TE-70X (not shown)**  
This radar target enhances, amplifies and retransmits an interrogating pulse with minimum delay, providing a response on a radar screen that is strong, conspicuous and consistent.

**LANTERN GUARD**  
A marine grade, hard-anodised aluminium provides durable protection for the buoy lantern. An extended focal plane version (not shown) is available.

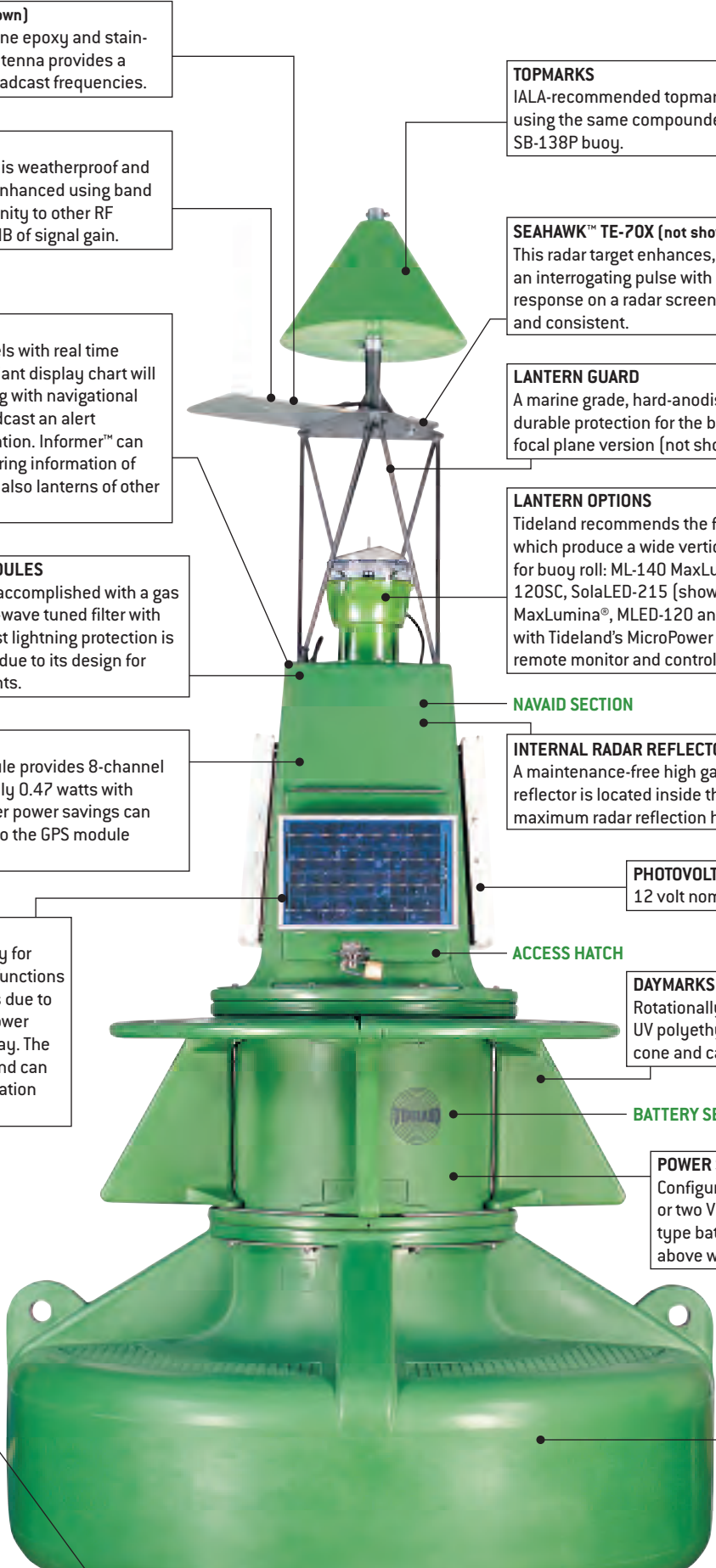
**LANTERN OPTIONS**  
Tideland recommends the following lantern options, which produce a wide vertical divergence to compensate for buoy roll: ML-140 MaxLumina®, MLED-120, MLED-120SC, SolaLED-215 (shown) and MLED-215. The ML-140 MaxLumina®, MLED-120 and MLED-120SC are equipped with Tideland's MicroPower OMNIBUS® II technology for remote monitor and control capability.

**NAVAID SECTION**  
**INTERNAL RADAR REFLECTOR**  
A maintenance-free high gain 10m<sup>2</sup> passive radar reflector is located inside the navaid section, providing maximum radar reflection height from the water surface.

**PHOTOVOLTAIC SYSTEM**  
12 volt nominal based on solar modules.

**ACCESS HATCH**  
**DAYMARKS**  
Rotationally moulded, using compounded UV polyethylene forming panels for buoy cone and can shapes.

**BATTERY SECTION**  
**POWER SYSTEM**  
Configured for 12 volts with either one or two VIVA® secondary AGM spill proof type batteries. Entire power system is above waterline.



**FLOAT SECTION**

## SPECIFICATIONS

Construction .....	Rotationally moulded in medium density UV-stabilised virgin polyethylene, 9.5 mm thick
Foam Filling .....	16 kg/m <sup>3</sup> expanded polystyrene foam
Air Weight .....	454 kg (1000 lb) (including two 38 mm (1-1/2 in) shackles)
Diameter .....	1750 mm (5 ft 9 in)
Focal Plane Height .....	2290 mm (7 ft 6 in)
Optional Extended Focal Plane .....	2900 mm (9 ft 6 in)
Draft .....	751 mm (2 ft 6 in)
Freeboard .....	305 mm (1 ft)
Submergence .....	24.7 kg/cm (138 lb/in)
Radar Reflector .....	10 m <sup>2</sup> (X-band)
Radar Range, nominal .....	3 to 4 NM
Visual Area	
with daymark panels (can shape) .....	1.6 m <sup>2</sup> (17.2 ft <sup>2</sup> )
with daymark panels (nun shape) .....	1.5 m <sup>2</sup> (16.1 ft <sup>2</sup> )
Surface Colour .....	As Specified
Maximum Mooring Load .....	636 kg (1400 lb)
Maximum Current .....	6 knots

NOTE: Specifications are subject to change.



## RECOMMENDED MOORINGS

### CURRENT LESS THAN 2 KNOTS

Water Depth ft	Chain Length (Shot)	Chain Size	Sinker Air Wt. lb
35	45 ft (1/2)	1 1/8 in	4,000
35-50	90 ft (1)	1 in	4,000
50-80	135 ft (1 1/2)	1 in	4,000
80-120	180 ft (2)	3/4 in	4,000
120-160	225 ft (2 1/2)	5/8 in	4,000
160-200	315 ft (3 1/2)	1/2 in	4,000

### CURRENT 2-4 KNOTS

Water Depth ft	Chain Length (Shot)	Chain Size	Sinker Air Wt. lb
35	90 ft (1)	1 1/8 in	4,000
35-50	90 ft (1)	1 in	4,000
50-80	135 ft (1 1/2)	1 in	5,000
80-120	225 ft (2 1/2)	3/4 in	5,000
120-160	450 ft (5)	5/8 in	5,000
160-200	450 ft (5)	1/2 in	6,000

### CURRENT 4-6 KNOTS

Water Depth ft	Chain Length (Shot)	Chain Size	Sinker Air Wt. lb
35	90 ft (1)	1 1/8 in	5,000
35-50	135 ft (1 1/2)	1 in	5,000
50-80	180 ft (2)	1 in	6,000
80-120	270 ft (3)	3/4 in	7,000
120-160	—	—	—
160-200	—	—	—

#### NOTES:

- Minimum recommended chain size 13 mm (1/2 in).
- Recommended chain weight: minimum 140 kg (300 lb); maximum 636 kg (1400 lb).
- Mooring depth: minimum 1.8 m (6 ft); maximum 60 m (200 ft).
- Bridle weight included. Chain weight is used for partial ballast of buoy. At shallow mooring depths, use larger than minimum diameter chain for increased stability.
- Bridle size (diameter x length) 22 mm x 3 m (1 in x 10 ft). Air weight with shackle and swivel 41 kg (90 lb).
- Concrete sinker air weight (min.) 1,816 kg (4,000 lb). For rocky and coral bottom, add 30%.

**WHEN ORDERING MOORINGS, SPECIFY SITE CONDITIONS.**

V-Track Informer and SeaHawk are trademarks and MaxLumina, MicroPower OMNIBUS, Sentinel and VIVA are registered trademarks of Tideland Signal Corporation.

## TIDELAND SIGNAL CORPORATION CORPORATE HEADQUARTERS

P.O. Box 52430  
Houston, Texas 77052-2430, USA  
4310 Directors Row  
Houston, Texas 77092 USA  
PH: + 1 713-681-6101  
FAX: + 1 713-681-6233  
E-MAIL: [hq@tidelandsignal.com](mailto:hq@tidelandsignal.com)

P.O. Box 52370, O.C.S.  
Lafayette, Louisiana 70505-2370, USA  
PH: + 1 337-269-9113  
FAX: + 1 337-269-9052  
E-MAIL: [lafayettesales@tidelandsignal.com](mailto:lafayettesales@tidelandsignal.com)

TIDELAND SIGNAL CANADA LTD.  
#2170-21331 Gordon Way  
Richmond, B.C., Canada V6W 1J9  
PH: + 1 604-247-0988  
FAX: + 1 604-247-0987  
E-MAIL: [sales@tidelandsignalcanada.com](mailto:sales@tidelandsignalcanada.com)

TIDELAND SIGNAL PTE. LTD.  
Crystal Time Building  
16 Tannery Lane #04-00  
Singapore 347778  
PH: + 65 6333-0078  
FAX: + 65 6333-0079  
E-MAIL: [sales@tidelandsignal.com.sg](mailto:sales@tidelandsignal.com.sg)

TIDELAND SIGNAL LIMITED  
Unit B, Kendal House  
Victoria Way  
Burgess Hill, Sussex, RH15 9NF, UK  
PH: + 44 (0) 1444 872240  
FAX: + 44 (0) 1444 872241  
E-MAIL: [sales@tidelandsignal.ltd.uk](mailto:sales@tidelandsignal.ltd.uk)

TIDELAND SIGNAL LTD. (UAE)  
FZS1 BB03, JAFZA South  
Jebel Ali Free Zone, Dubai, U.A.E.  
PH: + 971 4-886-0180  
FAX: + 971 4-886-0181  
E-MAIL: [sales@tidelandsignal.ltd.uk](mailto:sales@tidelandsignal.ltd.uk)

**WEB SITE: [www.tidelandsignal.com](http://www.tidelandsignal.com)**



Tideland Signal Corporation maintains ISO 9001:2000 accreditation. It is company policy to provide products and services that meet the highest standards of quality in the industry.

Membership Organisations



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