Beacon Descriptions

The following pages include copies of the manufacturers' sales materials for the beacons tested by Equipped To Survive Foundation for the Evaluation of 406 MHz Location Protocol Distress Beacons, April, 2004:





GlobalFix™ 406

Product No. 2744 Cat II (Manually Deployed) 406 MHz EPIRB with Integral GPS Model No.: RLB-35 Cat II

- > FastACQ™ GPS engine acquires LAT/LON from a cold start better than normal GPS engines
- > Patented proprietary electronics package provides greater frequency stability for most accurate position through the LEOSAR satellites
- > FastACQ™ GPS is on for up to 25 minutes in the first 45 minutes of operation
- > 100 m (110 yds) GPS position accuracy, optimum allowed by COSPAS-SARSAT
- > Only EPIRB available that provides a GPS acquisition test, a full functional self test of internal circuitry, and battery voltage test
- > High-impact polycarbonate case with non-tangling lanyard
- > Universal Low Pro™₂ Category II EPIRB Bracket (P/N 9430) included; bulkhead and rail mounting
- > Class 1 battery for colder temperature operation; minimum 48 hrs @ -40°C (-40°F), 5 year replacement
- > Automatically activated when out of bracket and in the water or manually activated
- >Transmits on 406 MHz (COSPAS-SARSAT) with your registered, digitally-coded distress signal, and 121.5 MHz (SAR homing frequency)
- > Audio/visual indicators of active transmission
- > Floats upright with high visibility built-in strobe

Size: 17.5 x 4.75 x 3.5 in (44.4 x 12.1 x 8.9 cm)

Weight: 2.3 lbs (1.04 kg)

Material: High impact polycarbonate blend case/polyethylene bracket

Color: Hi-Viz Yellow/White bracket

Deployment: Manual

Operation: Lift switch up, slide left, push down fully breaking tab; water activated when out of bracket

Waterproof: 33 ft (10 m)

Accessories: 1096 Battery Replacement Kit

Certification: Approved by COSPAS-SARSAT, FCC, USCG; complies with GMDSS, European MED

Radiated Power: 5 watts \pm 2dB (406 MHz) 50 mW \pm 3 dB (121.5 MHz) Battery Type: Lithium 5-year replacement life (11-year storage life)

Frequency: 406.028 MHz, 121.5 MHz Carton Weight: 3.5 lbs (1.59 kg)

Carton Dimensions: 18.0 x 7.0 x 6.0 in (45.7 x 17.8 x 15.0 cm)

Units Per Carton: 1 Modulation: AM

Limited Warranty: 5 years U.S. Patent No. 6,501,340



5757 Ravenswood Road Fort Lauderdale, FL 33312, U.S.A. Tel Worldwide: +1(954) 981-3333 Fax: +1(954) 983-5087

A Chelton Group Company .





RapidFix[™] 406

Product No. 2777.5 Cat II (Manually Deployed) 406 MHz EPIRB with GPS Interface Model No.: RLB-33 Cat II

- Improved GPS LED Infrared Interface (NMEA 0183) cable, visually confirm GPS download; GPS LAT/LON are sent on the very first burst, no waiting to acquire GPS coordinates
- > Patented proprietary electronics package provides greater frequency stability for most accurate position through the LEOSAR satellites
- > When GPS data is present, 100 m (110 yds) GPS position accuracy, optimum allowed by COSPAS-SARSAT
- > World's smallest 406 MHz EPIRB that meets all regulations and is fully approved worldwide
- > GPS confirmation test; a full functional self test of internal circuitry, and battery voltage test
- > High-impact polycarbonate case with non-tangling lanyard
- > Universal Low Pro™₂ Category II EPIRB Bracket (P/N 9430) included; bulkhead and rail mounting options
- > Class 1 battery for colder temperature operation; minimum 48 hrs @ -40°C (-40°F), 5 year replacement
- > Automatically activated when out of bracket and in the water or manually activated
- >Transmits on 406 MHz (COSPAS-SARSAT) with your registered, digitally-coded distress signal, and 121.5 MHz (SAR homing frequency)
- > Audio/visual indicators of active transmission
- > Floats upright with high visibility built-in strobe

Size: 14.5 x 4.25 x 3.62 in (36.8 x 10.8 x 9.2 cm)

Weight: 1.9 lbs (.861 kg)

Material: High impact polycarbonate blend case/polyethylene bracket

Color: Hi-Viz Yellow/White bracket

Deployment: Manual

Operation: Lift switch up, slide left, push down fully breaking tab; water activated when out of bracket

Waterproof: 33 ft (10 m)

Accessories: 1096 Battery Replacement Kit

Certification: Approved by COSPAS-SARSAT, FCC, USCG; complies with GMDSS, European MED

Radiated Power: $5 \text{ watts} \pm 2 \text{dB}$ (406 MHz) $50 \text{ mW} \pm 3 \text{ dB}$ (121.5 MHz) Battery Type: Lithium 5-year replacement life (11-year storage life)

Frequency: 406.028 MHz, 121.5 MHz Carton Weight: 3.0 lbs (1.36 kg)

Carton Dimensions: 18.0 x 7.0 x 6.0 in (45.7 x 17.8 x 15.0 cm)

Units Per Carton: 1 Modulation: AM

Limited Warranty: 5 years U.S. Patent No. 6,501,340



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A Chelton Grown Company





GyPSI™ 406 PLB



406 MHz Personal Locator Beacon with GPS Interface

Product No. 2793 FCC APPROVED

Product No. 2790 Approved for sale outside the United States

- > Transmits on 406 MHz via the COSPAS- SARSAT satellite system with your registered unique, digitally coded distress signal and 121.5 MHz (SAR homing frequency).
- Recessed, waterproof GPS/programming interface (NMEA 0183) transmits GPS data for even faster response.
- Small, lightweight unit can be easily carried in a pack or pocket; small enough to wear on deck by racers, crew, solo cruisers, kyakers, climbers, hikers, hunters, pilots or any outdoor enthusiast.
- > Single, three position switch for simplicity. Red LED flashing indicates unit is "ON", Yellow LED flashing indicates test sequence in process, steady green LED indicates unit has passed full functional test.
- > Functional test for battery power, 406 MHz transmission, and GPS.
- > Flat, stainless steel antenna wraps compactly around bottom case for easy stowage; is easily positioned when needed.
- > Floats to avoid loss if dropped in water, waterproof to 3.3 ft (1 m).
- > Case and instruction label are oil, water and UV resistant, with non-corroding components.
- > Wrist lanyard ensures security when hand-held.
- > Can be stored between -50° C and +70°C (-58°F and +158°F).

Size: 1.9 x 6.5 x 3.8 in (4.8 x 16.5 x 9.5 cm)

Weight: 17.6 oz. (499 g)

Battery: Lithium 5 year replaceable (11 year storage)

Material: Fiber reinforced polycarbonate blend with resin tougheners

Color: Hi-Viz Yellow/Blue

Deployment: Manual

Operation: Lift switch up, slide right, push forward breaking tab

Accessories: RapidDitch-P carrying bag Included (P/N 2267)

Certification: Approved by COSPAS -SARSAT; FCC approved

Limited Warranty: 5 years

Included

Radiated Power: 5 watts ± 2dB (406 MHz) 50 mW ± 3dB (121.5 MHz)

Operational Life: In excess of 24 hours @ -40°C (-40°F), longer in

higher ambient temperature



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General Message formats

Programming Temperature

Battery life

Sealing depth Weight Auto case & EPIRB

406MHz transmitter

Frequency Output power Modulation 121.5MHz transmitter

Frequency Output power Modulation

Visual location

Intensity Flash rate

Approvals
Complies with IMO resolutions A662(16), A694(17), A810(19)

406.028MHz +/-1kHz 5 Watts +/- 2dB Biphase 1.1 +/- 0.1 radians

121.5MHz +/-3kHz 50mW ERP AM,up or down swept tone

0.75Cd Xenon discharge light 23 flashes per minute

LEC 1097-2 Cospas-Sarsat C.S.T.001 and T.007 European ET-3-30-0466 USA, RTCM, FCC Approved, EU MED (Ships Wheel) Approved, GPS

Emergency Position Indicating Radio Beacon (EPIRB)

The Precision 406 GPS EPIRB is the result of extensive research and development which brings together the expertise of McMurdo and the knowledge of Pains-Wessex, utilizing the award-winning design of the Rescue 406 EPIRB.

The Precision 406 GPS EPIRB features an integral 12 channel parallel GPS receiver within a compact 406 EPIRB. The benefits of the Precisions integral GPS is that position information is updated every 20 minutes providing an accurate position even when the EPIRB has been activated and is drifting in the sea.

Using the latest Cospas Sarsat satellite constellation, the McMurdo Pains-Wessex Precision 406 GPS EPIRB provides an instant EPIRB alert to the search and rescue services. The vessel's details, together with latitude and longitude, are signalled to rescue services thus avoiding lengthy searches.

As with all Mcmurdo Pains-Wessex commercial products the Precision 406 GPS EPIRB is fully compliant with international legislation and meets worldwide approval standards.

- High intensity xenon strobe light
 - Global coverage with Cospas Sarsat polar orbiting satellites
- Geostationary coverage >75°N 75°S
- Typical battery life 48 hours at 4°F Transmits on new C-S frequency of 406.028MHz
- Comprehensive transmit fault indicator
- Handles all Cospas Sarsat EPIRB message formats (location and user protocols)
- Comprehensive transmit fault indicator
- 121.5 MHz homing transmitter indicator
- 406 MHz Transmit Indicator
- 121.5 MHz fault indicator
- 406 MHz fault indicator
- GPS position acquired indicator GPS position transmitted indicator
- Integral 12 channel parallel GPS receiver
- GPS cold start time to fix typically less than 5 minutes GPS transmitted position update rate every 20 minutes
- (as permitted by Cospas Sarsat)
- GPS reacquisition time, typically less than 60 seconds Positional accuracy better than ±197' (60m) typically 98.5' (30m) Time to alert, less than 5 minutes (via geostationary satellite)

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Model	Category	Class	Deployment / Description	Part No.
Precision GPS EPIRB	2	2	Manual / c/w Bulkhead Bracket	82-514A
Precision GPS EPIRB	2	2	Manual / c/w Protective Housing	82-524A
Precision GPS EPIRB	1	2	Auto / c/w Float-Free Housing	82-504A
Protective Housing			Manual / w/o HRU	82-534A
Float-Free Housing		2	Auto / c/w HRU	82-544A
Bulkhead Bracket			Manual	82-276B

Other GMDSS equipment in the McMurdo Pains-Wessex Safety product Range includes Radios and SART

AUTHORIZED DEALER



Exclusive US importer for McMurdo Pains Wessex Electronics

Revere Supply Co. Inc 3 Fairfield Crescent West Caldwell, NJ 07006

Phone: 973-575-8811 Fax: 973-575-1788 e-mail: sales@reveresupply.com

www.reveresupply.com





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Programming

Temperature

Battery life Sealing

Weight

406MHz transmitters

Output power Modulation

121.5MHz transmitter

Frequency Output power Modulation Approvals

R & TTE Approved International Approvals to follow

PLB National, Standard, and User Location Protocol as applicable, plus serial (non-GPS version)

Via RSZ32 light pen and windows based PC

Storage: -67°F to +158°F (Class 1) Operating: -40°F to +131°F (Class 1) With class 1 battery pack

Storage: -22°F to +158°F (Class 2) Operating: -4°F to +131°F (Class 2) With class 2 battery pack

5 years storage then 24 hours operation

BSEN 60945 temporary immersion MIL-STD-810F method 500.4 15,000 feet altitude

Approx. 14oz with -40° battery pack Approx. 9oz with -4° battery pack

406.028MHz +/-1kHz 5 Watts +/- 2dB Biphase L

121.5MHz +/-3kHz AM,up or down swept tone



Dive Canister



Direction Finder







These latest advanced products from McMurdo Pains Wessex have been designed to provide all types of outdoorsmen with the very best chance of being found without delay in an emergency on land, on sea, or in the air.

- Global coverage with Cospas-Sarsat polar orbiting satellites
- Geostationary coverage >75°N 75°S
- Comprehensive indication of operation

121.5 MHz transmission 406 MHz transmission

GPS acquisition and fix status

- Integral 12 channel parallel GPS receiver
- GPS cold start time to fix typically less than 3 minutes
- GPS transmitted position update rate every 20 minutes (as permitted by Cospas-Sarsat)
- GPS reacquisition time, typically less than 60 seconds
- Positional accuracy typically 100 feet
- Time to alert, typically three minutes (via geostationary satellite)



Carry case and lanyard

Carrying the Fastfind could not be simpler, both versions come equipped with a lanyard and carrying case to enable the user to keep the PLB safely attached at all times. A watertight canister is also available for diving.



Exclusive US importer for McMurdo Pains Wessex Electronics

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HR Smith Group of Companies

Multi Function Personal Locator Beacons PLUS Embedded GPS

Series 500-27

Specmat Technologies Inc. 215 Dunavant Drive Rockford, TN 37853 Tel: 865-609-1411 Fax: 865-609-1911 E-mail: spectinc01@aol.com

www.searchandrescue.com



Techtest Limited

Advanced test and measuring equipment





Multi Function Personal Locator Beacons PLUS Embedded GPS

Series 500-27

Features

- Simultaneous Transmissions.
- Beacon and Speech Modes and COSPAS/SARSAT coverage.
- Continuous transmission of GPS lat/long data on COSPAS/SARSAT data burst.
- Unique remotely programmable country code function for406.025MHz.
- Manual or automatic operation.
- Meets NATO STANAG 7007, latest issue. ED-62 CAA CAP 208 Chapter 10.
- Waterproof to 10 metres.
- Reprogrammable on aircraft.

The Series 500-27 Personal Locator Beacons are simple, compact lightweight units which can be used either manually or automatically via ejection seat harness. A fully embedded 12 channel GPS with data burst transmission on 406.025 MHz. Fully compatible with the majority of search and rescue equipment including the COSPAS/SARSAT satellite based survivor location equipment.

The PLB is a one piece unit with the transmission housed in a yellow pigmented or NATO green moulded thermoplastic case, which is designed such that the replaceable battery pack can be mounted within the overall package to form a smooth but non-slip hand portable unit. The design is such that easy replacement of the battery module (15 seconds) is possible during beacon operation. Full speech capability on 121.5 and 243 MHz together with an audible tone indicating live beacon transmissions with GPS lat/long position. The unit is designed to survive for up to ten years with the only maintenance being battery replacement every five years. The antenna (supplied) is capable of being attached directly to the PLB or remote through a cable assembly for operation in a dinghy.

Specification

Transmitter Signal

Frequency

The PLB transmits modulated homing signals on both 121.5 MHz (Civil), and 243.0 MHz (Military) distress frequencies, with characteristics in accordance with STANAG 7007. Together with 406.025 MHz in accordance with COSPAS/SARSAT

Channel

Transmissions and reception on both frequencies are compatible with 25KHz channel spacing

Modulation (121.5 and 243 MHz)

Continuous Swept Tone of at least 700Hz within the Sweep Range.

1.6 KHz to 300Hz (i.e. downwards). Sweep Range

Sweep Rate 2-3 Hz

Amplitude Modulated with Rectangular Wave. Modulation Depth - 67% minimum (80% typical).

Modulation (406.025 MHz)

0.5 Secs 5W pulse every 50 secs.

Phase modulation of +/- π/3 rad (peak)

Digital modulation to include (see C/S G.005 iss. Rev 1, Section 3)

Bit Synchronisation

Frame Synchronisation Protected Field

Emergency-Code/National Use Field

Long Message (optional)

GPS Receiver (Embedded)

Snap Start (advanced hot start) 2 sec Hot Start (avg) < 8 sec < 40 sec Warm Start (avg) Cold Start (avg) < 50 sec Satellite Signal Reacquisition Time 100 ms No of Channels 960 Correlation Points Min Signal Level Tracked -172 dBw 110 mA Power Consumption L1 C/A Code Receiver Protocols NMEA V2.2, SIRF

GPS Antenna

Centre Frequency 1575,42 MHz 2 MHz min (at -10dB point) Bandwidth 1 dBi min (elevation 90°) Gain VSWR (at fo) 2.0:1 max

Impedance (at fo) 50 ohm RHCP Polarisation

Power Output (121.5 and 243 MHz) 48 hours min., 100mW (+20dBm) at -20°C.

Power Output (406.025 MHz)

24 hours min., 5W (+37dBm +/- 2dBm) at -20°C. Activation Manual or Automatic

150 x 87 5 x 37 5 mm **Dimensions** Weight 650am nominal Colour NATO green or yellow

Compliance

The PLB is compliant with the following specifications.

Civil

BS 3G 100 Series for general requirements for use in aircraft. CAP 208 Aircraft Radio Equipment Issue 2 January 1991, Volume 1 Part 10 -Survival (ELTS). EUROCAE ED62 / RTCA DO-204 / RTCA DO-183 EUROCAE ED14C / RTCA DO-160C COSPAS/SARSAT

NATO - STANAG 7007 latest issue Personal Locator Beacon

TSO C91a and C126, JTSO-2C91a and 2C126

