

# BEDs concept datasheet

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Preliminary specifications of the BEDs system. BEDs deployable unit consists of cylindrical housing containing battery pack, electronics, acoustic modem, and emergency transponders; enclosed into hydro dynamically shaped flotation sphere foam pack, equipped with UHMW end caps allowing acoustic communication.

## General Specifications

- Weight: 50lb (23 kg)
- Dimensions: 15" (0.38m) sphere
- Displacement: 0.58 cu.ft (16L)
- Operating temperature: -10 to +50C
- Transportation temperature: -20 to 80C
- Max operation depth: 500m

## Motion detection performance

- Gyro resolution: 0.062 deg/sec
- Gyro full range: +/- 2000 deg/sec (5.5 turns/sec)
- Linear acceleration resolution: 0.5 mg (0.005 m/s<sup>2</sup>)
- Linear acceleration full range: +/-16 g (+/-157 m/s<sup>2</sup>)
- Depth resolution: 0.03m (at 14bit ADC)
- Depth accuracy: ~ 0.2%span or 1m
- Depth full range: 500m

## Battery and electrical:

- Pack configuration: Electrochem CSC93, 7s2p
- DC load discharge range: 27.5 to 17.5 VDC
- Pulse load discharge range: 17.5 to 13.5V at 4A peak

## Acoustic link performance:

- Max range: 2-3km (horizontal range in water)
- Operating range when buried: TBD
- Frequency bands: 9–14 kHz (LF)
- Baud rate: 300-10240 bps

## Deployment performance:

- Max length of deployment at Event Duration Transmitted:
  - 500 days at 0 hours
  - 400 days at 0.5 hours
  - 300 days at 1.0 hours
  - 200 days at 1.5 hours
  - 100 days at 2.0 hours

