

## Buoys and Flotation For Subsurface Oceanographic Moorings

**Syntactic** subsurface buoyancy for ADCP buoy applications with integral stainless steel instrument mounting frames, or with single strength members for use as primary or back-up mooring flotation.

ADCP transducers and other sensors can be better directed to the surface when mounted inside the well of syntactic buoys and internally mounted instruments greatly reduce current drag and improve mooring performance.

Ellipsoid shaped subsurface buoys are also available and provide a lower drag coefficient than traditional spherical buoys which improves mooring performance by reducing lay down caused by water currents.

Ellipsoid shapes are also more predictable and have lower risk than other non-spherical buoyancy modules.

During mooring recovery operations, ellipsoid buoys provide excellent vertical position of beacons unlike spherical buoys with unbalanced instrument payloads that roll in ocean waves.

Using a fewer number of floats by increasing the diameter of the float will also greatly reduce horizontal drag. The cross sectional area affected by ocean currents is smaller when using fewer larger floats with equal buoyancy to that of many small floats.

For example: 35" diameter float rated for 1000m and buoyancy of 204 kg is equal in buoyancy to 8x 17" diameter floats. Clearly, 1x 35" float will have far less drag than 8x 17" floats.



### Features:

- Syntactic Composite Buoyancy Material
- Standard & Custom Instrument Frame Designs
- Unobstructed Transducer Beams (Doppler Profilers)
- Corrosion Resistant with Isolation Bushings & Anodes
- Integral Pressure Case Clamping Bands
- Frame Construction in 316 Stainless Steel
- Electro-Polished Stainless
- Single Strength Members in Stainless or Galvanized Steel
- High Strength - 2300 kg & 4500 kg

## Steel Subsurface Floats, Spheres, & Mooring Buoys

Steel spheres have been in use for over 30 years and continue to provide benefits to oceanographers and marine engineers for long term deployment of instrumentation and sample collection apparatus.

Steel floats can be made larger in volume than alternative plastic and glass floats, providing greater buoyancy per float. This advantage translates to better mooring performance as fewer floats for the same given buoyancy will result in lower drag



## Plastic Subsurface Floats & Mooring Buoyancy

Plastic fishing floats have a variety of instrument mooring applications. Configurations include; subsurface mooring flotation, instrument frame buoyancy, and pop-up recovery buoys for bottom mounts.

The basic configuration of placing floats in series on a single strength member provides an inexpensive buoyancy alternative in relatively shallow water applications. Galvanized steel strength members and shackle eyes with neoprene washers are used to build single, double or triple assemblies.

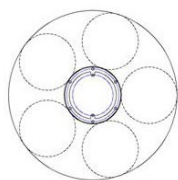


## Spherical Buoys

Model	Syntactic Foam for ADCPs				Standard Spherical Syntactic Foam			
	SB-30	SB-35	SB-47	SB-65	SF-30	SF-35	SF-47	SF-65
Diameter	76 cm	90 cm	120 cm	165 cm	76 cm	90 cm	120 cm	165 cm
Instrument well diameter	28 cm	28 cm	28 cm	28 cm	-	-	-	-
Buoyancy (300m)	117 kg	199 kg	525 kg	1450 kg	149 kg	238 kg	575 kg	1450 kg
Buoyancy (1000m)	102 kg	174 kg	459 kg	1270 kg	131 kg	208 kg	503 kg	1270 kg
Buoyancy (2000m)	76 kg	129 kg	341 kg	950 kg	97 kg	154 kg	374 kg	950 kg
Buoyancy (3000m)	64 kg	110 kg	288 kg	815 kg	82 kg	131 kg	312 kg	815 kg

## Ellipsoidal Buoys for low drag (Syntactic foam and plastic)

Float	EF-33	EF-33-P6	EF-46-P7	EF-46	EF-58
Diameter	84 cm	84 cm	117 cm	117 cm	148 cm
Height	46 cm	46 cm	66 cm	66 cm	79 cm
Buoyancy (300m)	108 kg	50 kg		317 kg	544 kg
Buoyancy (1000m)	88 kg	-	-	272 kg	498 kg
Buoyancy (2000m)	68 kg	-	-	204 kg	358 kg
Buoyancy (3000m)	56 kg	-	-	172 kg	291 kg
Buoy with frame	EB-33	EB-33-P5	EB-46	EB-58	
Diameter	84 cm	84 cm	117 cm	148 cm	
Height	46 cm	46 cm	66 cm	79 cm	
Buoyancy (300m)	90 kg	36 kg	285 kg	524 kg	
Buoyancy (1000m)	72 kg	-	250 kg	453 kg	
Buoyancy (2000m)	54 kg	-	181 kg	362 kg	
Buoyancy (3000m)	45 kg	-	150 kg	273 kg	



Plastic Floats 300m Depth



Syntactic Foam to 3km Depth

Buoyancy doesn't include frame weight  
Actual buoyancy +/-5%  
19mm Galvanized Steel Rod (SWL 2700 kg)

## Other Spherical buoys

Model	Steel		Plastic	
	SSF-30	SSF-37	SPF-11	SPF-14
Size	30" (76 cm)	37" (94 cm)	11" (28 cm)	14" (36 cm)
Buoyancy	168 kg	317 kg	8.8 kg	17.6 kg
Depth Rating	380 m	380 m	400 m	800 m
Weight (Air)	75 kg	137 kg	2.4 kg	7.1 kg



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