



"We tame the tough ones"

FLOATATION DEVICES CATALOG

URETHANE TECHNOLOGIES, INC.

30150 Eden Church Road • Denham Springs, Louisiana 70726

Telephone : (225) 664-9936

Fax : (225) 664-9938

Web Site: www.utibuoy.com

E-mail: uti@utibuoy.com

TABLE OF CONTENTS

	PAGE
I. MOORING BUOYS	
A. PMBR Series Small Mooring Buoys	3
B. SD Series Mooring Buoys	3 A
C. MBP Series Mooring Buoys	4
D. PCMB Series Coned Top/ Peg Bottom Mooring Buoys	5
E. DBB Drawback Buoys	6
F. PPMB Flat Top/Peg Bottom Mooring Buoys	7
G. APB Anchor Pendant Buoys	8
II. SPECIAL PURPOSE & HAWSE PIPE BUOYS	
A. HP Series Hawsepipe / General Purpose	9
B. UB Series Utility Buoys	9 A
C. CCB Series Chafe Chain Buoys	9 B
D. PUB Series Pick-up Buoys	9 C
E. PUTB Series Pick-up Buoys	9 D
III. CHANNEL MARKERS, ETC.	
A. PCM Series Channel Markers w/ Exposed Radar Reflector	10
B. PMX Series Channel Markers	11
C. PCGX Series U.S.C.G. 1988 Style Channel Markers	12
D. CGXX Series U.S.C.G. 1995 Style Channel Markers	12A
E. Fast Water Buoys and Channel Markers	12B
F. PDM Series General Purpose Markers	13
G. PRMW Series Regulatory/Warning Markers	14
H. POMX Series Offshore Channel/Fairway Markers	15
I. PWVM Series Spar Marker Buoys - Variable Water Level	16
J. PWFM Series Spar Marker Buoys - Fixed Water Level	17
IV. ARTIFICIAL REEF & WELLHEAD MARKER BUOYS	
A. RMX Series Spar Buoys w/ Internal Radar Reflector	18
B. RM Series Spar Buoys w/ External Radar Reflector	19
V. LIGHTED BUOYS	
A. RMX-L Series Lighted Spar Buoys	20
B. PCLM Series Lighted General Purpose Markers	21
C. PPLM Series Lighted Pipeline Marker Buoys	22
D. PPLT Series Lighted Pipeline Marker Buoys	23
E. POLM Series Lighted Offshore Marker Buoys	24
F. POLT Series Lighted Offshore Marker Buoys	25
G. 4 X 11 Lighted Channel Marker Buoys	26
H. 5 X 12 Lighted Channel Marker Buoys	27
I. 5X13 Lighted Fairway Marker Buoys	27 A
J. 5X9 Lighted Channel Marker Buoys	27 B
K. 6 X 15 Lighted Modular Offshore Marker Buoys	28
L. 6 X 12, 6X14 & 6X16 Lighted Offshore Fairway Marker Buoys	29A
M. 7 X 20 & 7X22 Lighted Offshore Fairway Marker Buoys	29B
N. 7 X 14 & 7X16 Lighted Offshore Fairway Marker Buoys	29C
O. 7 X 20 & 7X22 Lighted Offshore Fairway Marker Buoys	29B
P. 8 X 23 Lighted Offshore Fairway Marker Buoys	29D
Q. 8 X 26 Lighted Modular Offshore Marker Buoys	30
R. 8 X 26P Lighted Offshore Fairway Marker Buoys	31 A
S. 8 X 24 Lighted Offshore I.A.L.A. Marker Buoys	31 B

	PAGE
VI. TENSION BUOYS	
A. TN-223 & TN-330 Lighted Tension Buoys	32
B. TN-440 & TN-550 Lighted Tension Buoys	33
C. TN-660 & 675 Lighted Tension Buoys	33A
D. TN-800 & 875 Lighted Tension Buoys	33B
VII. OTHERBUOYS	
A. Instrument Buoys	34
B. Sub-sea Riser Buoys	35
VII. FLOATS	
A. PHC Series Horizontal Floats	36
B. PVC Series Vertical Floats	37
VIII. FENDERING	
A. Dock Fendering	38
B. Ship Fendering	39
IX. MISCELLANEOUS	
A. Pontoons	40
B. Castings - Polyurethane	40
C. Attachments & Accessories For Buoys	41-43
D. Buoy Lights	44
E. Mooring	45
F. Handy Constants & Formulas	48

	PAGE
VII. OTHERBUOYS	
A. Instrument Buoys	34
B. Sub-sea Riser Buoys	35
VII. FLOATS	
A. PHC Series Horizontal Floats	36
B. PVC Series Vertical Floats	37
VIII. FENDERING	
A. Dock Fendering	38
B. Ship Fendering	39
IX. MISCELLANEOUS	
A. Pontoons	40
B. Castings - Polyurethane	40
C. Attachments & Accessories For Buoys	41-43
D. Buoy Lights	44
E. Moorings	45
F. Handy Constants & Formulas	48

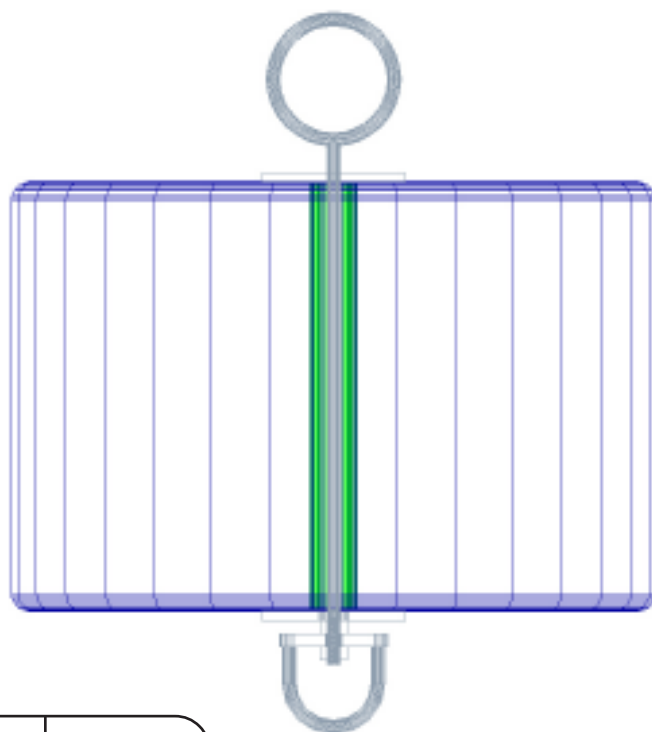
PMBR SERIES MOORING BUOYS

Buoys in this series are designed for mooring small craft. Each **PMBR** mooring buoy has a stainless steel swivel made into the lower closed 'U' hook.

- The **PMBR** series is made of closed cell, crosslinked polyethylene foam covered with a tough Seathane® polyurethane skin.

Steel components of these buoys are 304 stainless steel.

The **PMBR** series buoys are not internally ballasted. They depend on the weight of the mooring to maintain a proper attitude. An underwater weight of 15% to 35% of the buoy's net buoyancy should be provided by the mooring.

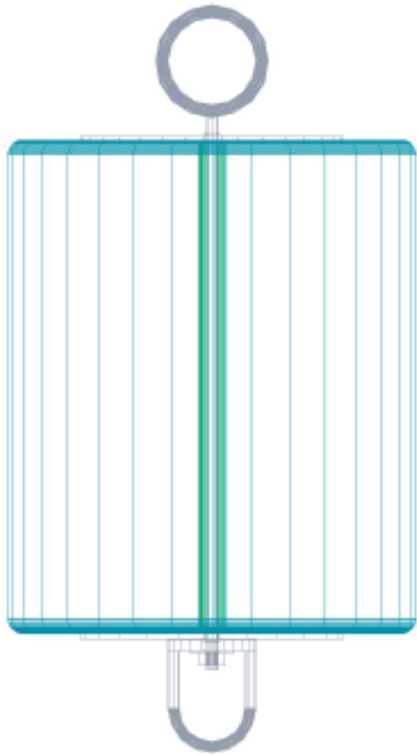


Model No.	Diameter	Height	Rod Dia.	Net Weight	Buoyancy
PMBR-8	8"	6"	3/8"	2 lbs.	8 lbs.
PMBR-12	12"	8"	3/8"	5 lbs.	27 lbs.
PMBR-18	18"	12"	7/16"	15 lbs.	95 lbs.
PMBR-24	24"	16"	1/2"	28 lbs.	234 lbs.



These buoys are not intended for use in areas where ice may crust in excess of 2".

Seathane® is a trademark of Urethane Technologies, Inc.



SD SERIES MOORING BUOYS

Buoys in this series are designed for mooring small to medium size craft. Each **SD** mooring buoy has a galvanized steel swivel made into the lower closed 'U' hook.

- The **SD** series is made of closed cell, crosslinked polyethylene foam covered with a tough Seathane[®] polyurethane skin.

- Steel components of these buoys are hot dipped galvanized steel. Stainless steel is optional at an additional cost.

- The **SD** series buoys are not internally ballasted. They depend on the weight of the mooring to maintain a proper attitude.

Model No.	Diameter	Height	Rod Dia.	Weight	Net* Buoyancy	Maximum Through Pull
SD-04	22"	26"	5/8"	72 lbs.	285 lbs.	7,200 lbs.
SD-05	24"	28-1/2"	5/8"	80 lbs.	465 lbs.	7,200 lbs.
SD-06	26"	29"	3/4"	87 lbs.	555 lbs.	10,700 lbs.
SD-08	28"	34"	7/8"	118 lbs.	755 lbs.	14,900 lbs.
SD-10	30"	36"	1"	140 lbs.	915 lbs.	19,600 lbs.
SD-12	32"	38"	1-1/8"	157 lbs.	947 lbs.	24,600 lbs.
SD-15	36"	38"	1-1/4"	195 lbs.	1,200 lbs.	34,500 lbs.

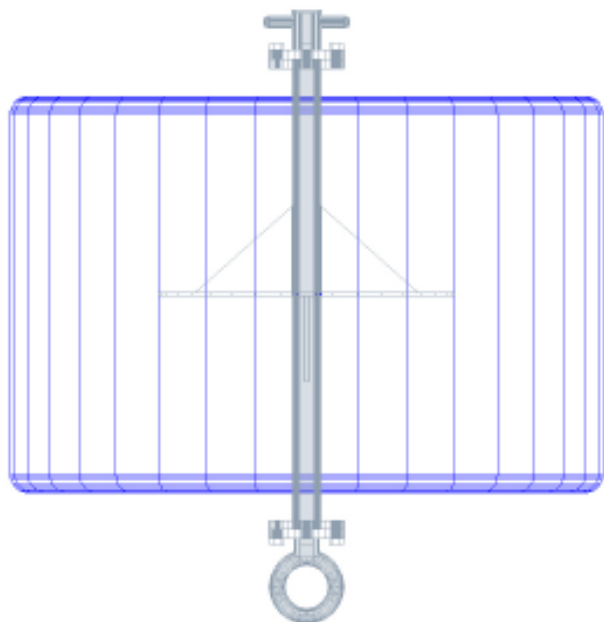
* Net Buoyancy is in fresh water.

An underwater weight of 20% to 40% of the buoy's net buoyancy should be provided by the mooring.

These buoys are not intended for use in areas where ice may crust in excess of 2".

Seathane[®] is a trademark of Urethane Technologies, Inc.





MBP SERIES MOORING BUOYS

MBP series buoys are designed for mooring of a wide range of vessels.

MBP series buoys are made of closed cell, crosslinked polyethylene foam covered with a tough fabric reinforced Seathane® polyurethane skin. The **MBP-48, MBP-60, MBP-72, MBP-96 & MBP-96X** mooring buoys have Spectra® 900 high strength fabric skin reinforcement. We do not offer this series in an economy version.

Steel components of these buoys are 304 stainless steel.

MBP series buoys are not internally ballasted. They depend on the weight of the mooring to maintain a proper attitude. An underwater weight of 20% to 50% of the buoy's net buoyancy should be provided by the mooring.

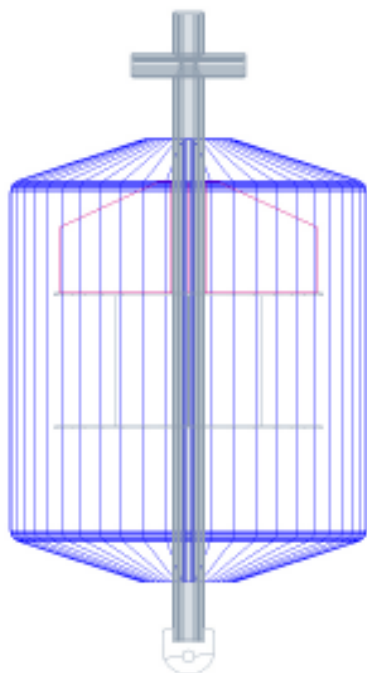
Model No.	Diameter	Height	Pipe Size	Flange & Weight	Net Buoyancy
MBP-24	24"	16"	1"	40 lbs.	215 lbs.
MBP-36	36"	24"	1-1/2"	130 lbs.	735 lbs.
MBP-48	48"	32"	2"	255 lbs.	1,790 lbs.
MBP-60	60"	40"	3"	490 lbs.	3,500 lbs.
MBP-72	72"	48"	4"	800 lbs.	6,100 lbs.
MBP-96	96"	60"	6"	1,575 lbs.	13,750 lbs.
MBP-96X	96"	96"	8"	2,770 lbs.	21,900 lbs.



These buoys are not intended for use in areas where ice may crust in excess of 2".

The **MBP** Series buoy shown at left is depicted with an optional mooring tee.

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*



PCMB SERIES MOORING BUOYS

PCMB series buoys are designed for mooring of a wide range of vessels in offshore conditions. They are also used as drawback buoys (backdown buoys) to hold workboats off of oil platforms. The coned top minimizes seagull roosting area while the peg bottom helps reduce shock loading on the mooring and airborne spray in heavy seas.

PCMB series buoys are made of closed cell, crosslinked polyethylene foam covered with a tough Spectra® 900 high strength fabric reinforced Seathane® polyurethane skin. We do not offer this series in an economy version because of the harsh conditions that this type of buoy must endure.

These buoys have internal aluminum radar reflectors embedded in the floatation foam.

Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and stainless steel metal components are optional.

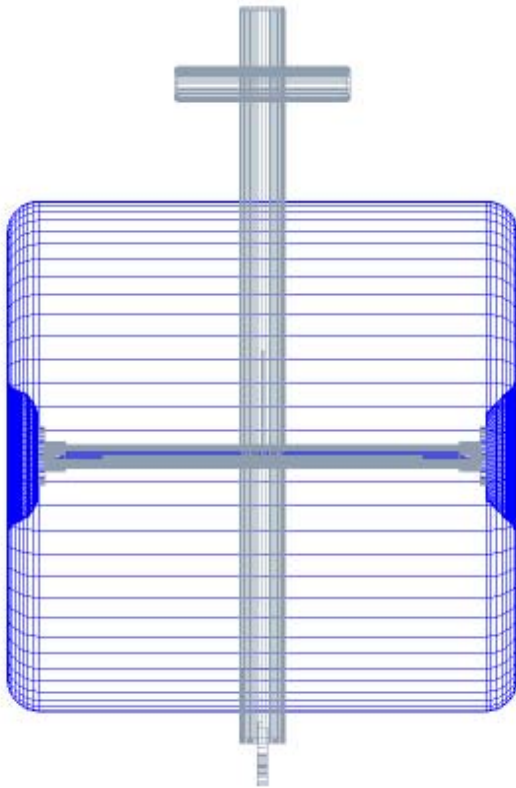
PCMB series buoys are not internally ballasted. They depend on the weight of the mooring to maintain a proper attitude. An underwater weight of 15% to 45% of the buoy's net buoyancy should be provided by the mooring.

Model No.	Diameter	St. Side Height	Through Pipe Size	Weight	Net Buoyancy
PCMB-2	24"	20"	3" Sch.40	74 lbs.	313 lbs.
PCMB-3	36"	30"	3" Sch. 80	183 lbs.	1,128 lbs.
PCMB-4	48"	40"	4" Sch. 40	360 lbs.	2,708 lbs.
PCMB-5	60"	50"	4" Sch. 80	650 lbs.	5,423 lbs.
PCMB-6	72"	60"	6" Sch. 40	1,387 lbs.	9,080 lbs.
PCMB-7	84"	78"	6" Sch. 80	2,233 lbs.	17,719 lbs.
PCMB-7.5	90"	87"	8" Sch. 40	3,122 lbs.	19,564 lbs.
PCMB-8	96"	96"	8" Sch. 80	4,390 lbs.	23,915 lbs.

These buoys are not intended for use in areas where ice may crust in excess of 4".

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*





DBB SERIES MOORING BUOYS

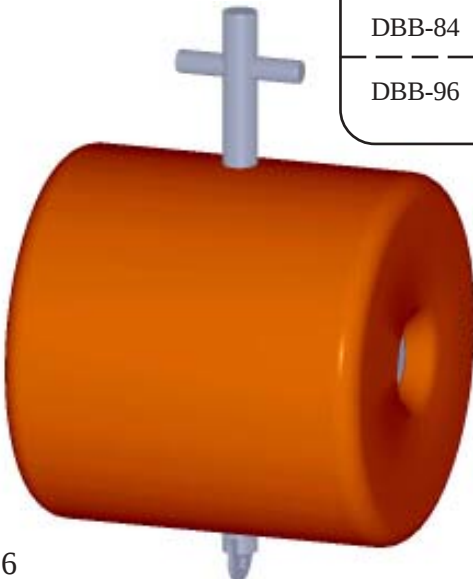
DBB series buoys were designed for use as drawback buoys (backdown buoys) to hold workboats off of oil platforms. The cylindrical shape minimizes seagull roosting area helps reduce shock loading on the mooring and airborne spray in heavy seas. The shape of these buoys also makes them easier to secure on a workboat deck in rough seas.

DBB series buoys are made of closed cell, crosslinked polyethylene foam covered with a tough Spectra® 900 high strength fabric reinforced Seathane® polyurethane skin. We do not offer this series in an economy version because of the harsh conditions that this type of buoy must endure.

Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel or stainless steel metal components are optional.

DBB series buoys are not internally ballasted. They depend on the weight of the mooring to maintain a proper attitude. An underwater weight of 10% to 30% of the buoy's net buoyancy should be provided by the mooring.

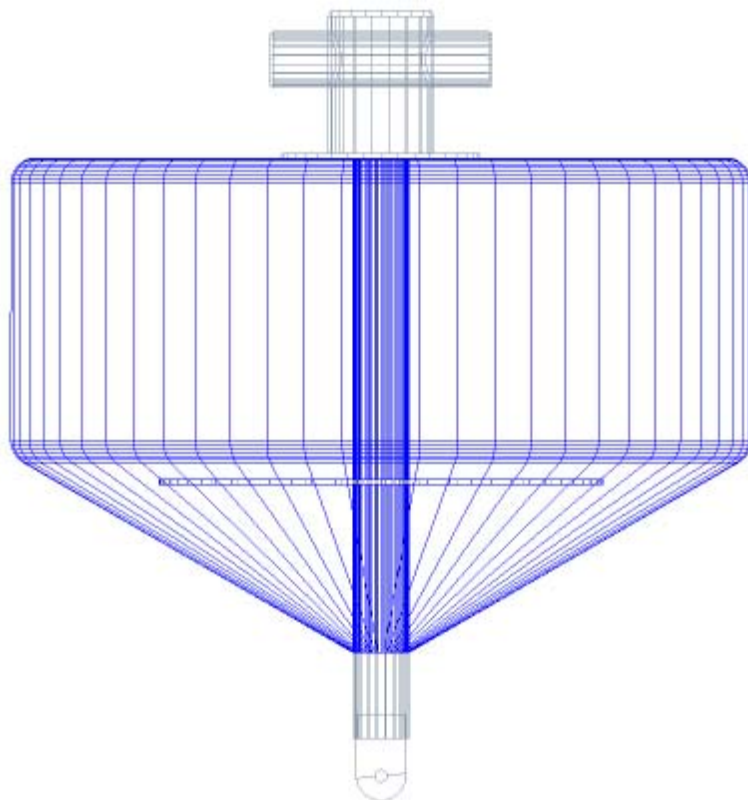
Model No.	Diameter	St. Side Length	Through Pipe Size	Weight	Net Buoyancy
DBB-24	24"	24"	3"	120 lbs.	270 lbs.
DBB-36	36"	36"	3"	360 lbs.	970 lbs.
DBB-48	48"	48"	4"	700 lbs.	2,480 lbs.
DBB-60	60"	60"	4"	1,290 lbs.	4,950 lbs.
DBB-72	72"	72"	6"	2,115 lbs.	8,600 lbs.
DBB-84	84"	84"	6"	3,290 lbs.	13,700 lbs.
DBB-96	96"	96"	8"	4,690 lbs.	19,800 lbs.



These buoys are not intended for use in areas where ice may crust in excess of 4".

These **DBB** series buoys are made of a denser foam than our other buoys as it is anticipated that they will be submerged up to 50 feet while the workboat is backing down on the platform.

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*



PPMB SERIES MOORING BUOYS

PPMB Series buoys are flat top, coned bottom mooring buoys designed for rough water conditions. An anti-skid surface is optional on the flat deck. There is a hefty oversized cruciform for attachment of large diameter lines

Seven foot diameter and larger buoys have an inner chamber that is filled with polyurethane foam. This foam is protected by a thick polyethylene foam layer which is in turn protected by a Spectra® 900 reinforced Seathane® polyurethane skin.

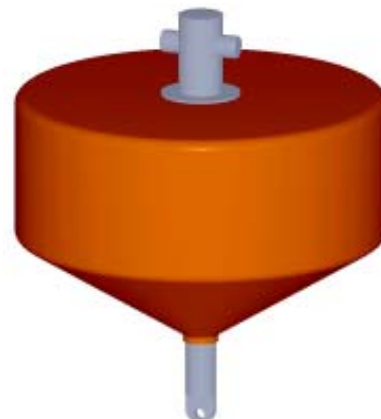
Metallic components are hot dipped galvanized carbon steel. Aluminum metalized carbon steel or stainless steel metal components are options.

These Mooring buoys require an underwater weight of 12% to 40% of their net buoyancy be provided by their mooring.

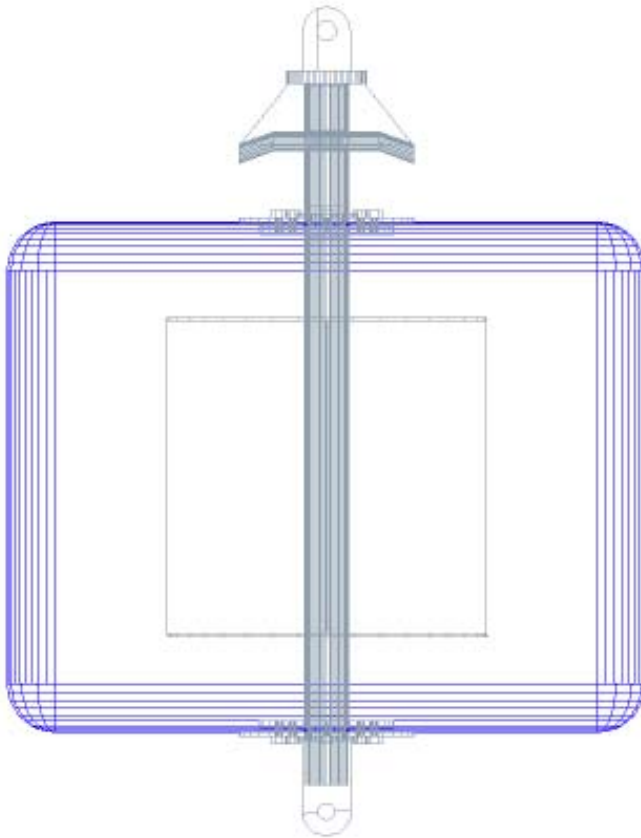
Model No.	Diameter	St. Side Height	Cone Height	Through Pipe Size	Weight	Net Buoyancy
PPMB-2	24"	10"	6"	2" Sch. 80	51 lbs.	164 lbs.
PPMB-2.5	30"	12"	8"	3" Sch. 40	90 lbs.	325 lbs.
PPMB-3	36"	14"	10"	3" Sch. 80	130 lbs.	535 lbs.
PPMB-4	48"	20"	14"	4" Sch. 40	297 lbs.	1,330 lbs.
PPMB-5	60"	24"	16"	4" Sch. 80	585 lbs.	2,450 lbs.
PPMB-6	72"	30"	20"	6" Sch. 40	845 lbs.	4,945 lbs.
PPMB-7	84"	32"	24"	6" Sch. 80	1,435 lbs.	6,700 lbs.
PPMB-9	108"	42"	30"	8" Sch. 80	3,200 lbs.	15,600 lbs.
PPMB-12	144"	56"	40"	12" Sch. 80	5,700 lbs.	37,600 lbs.

These buoys are not intended for use where ice may crust in excess of 3".

A version of the **PPMB** Series buoys is available with a "break-away" cruciform.



*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*



APB SERIES ANCHOR PENDANT BUOYS

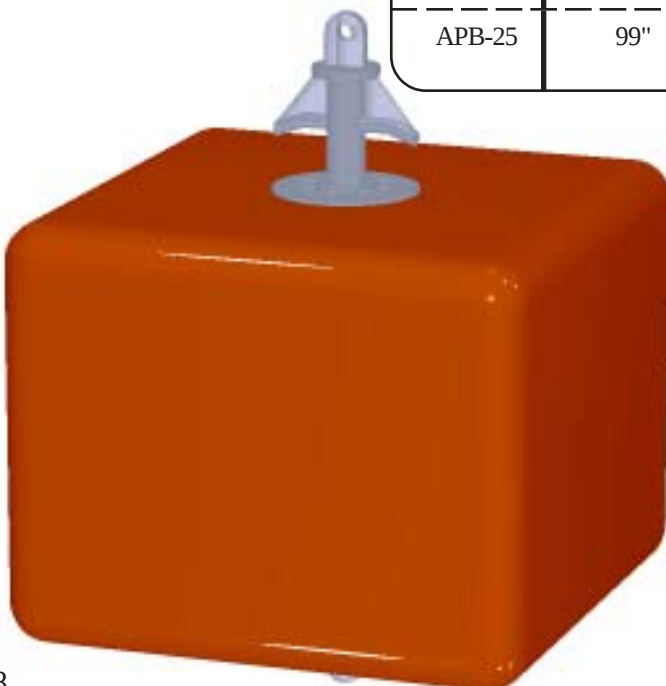
APB series buoys are rectangular(suitcase style), flat top, flat bottom buoys. This shape allows easy storage and stacking of the buoys on the workdeck.

APB series buoys are made of closed cell, crosslinked polyethylene foam covered with a tough Seathane® polyurethane skin reinforced with Spectra® 900 high strength fabric. We do not offer this series in an economy version since buoys of this type are usually subjected to very rough service. As anchor pendant buoys are handled, deployed and retrieved over and over; these units have an extra thick Seathane® polyurethane skin.

All metallic components of the **APB** series buoys are made of hot dipped galvanized carbon steel with aluminum metalized carbon steel or stainless steel optional.

APB series buoys are not internally ballasted. They depend on the weight of the mooring to maintain a proper attitude. An underwater weight of 17% to 45% of the buoy's net buoyancy should be provided by the mooring.

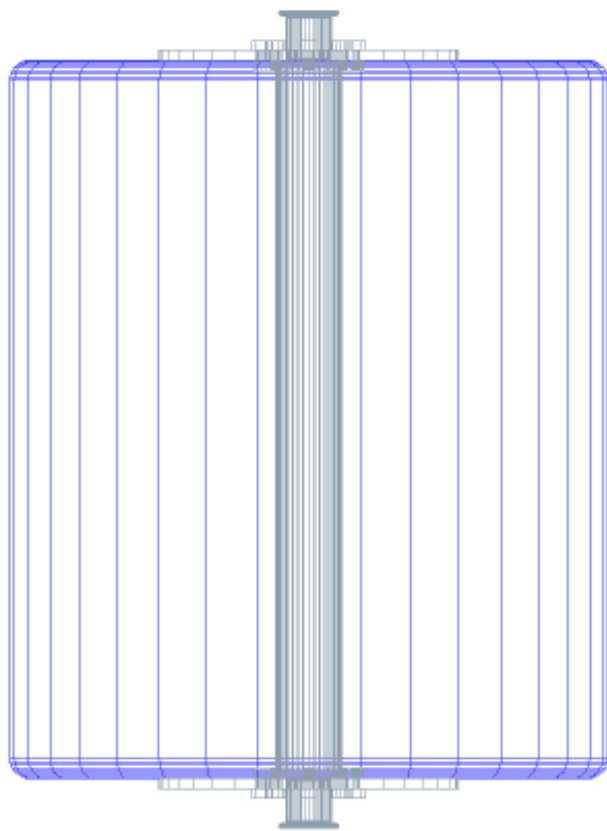
Model No.	Width & Length	St. Side Height	Overall Height	Weight	Net Buoyancy
APB-15	59"	47"	77"	1,200lbs.	4,850 lbs.
APB-20	79"	63"	102"	2,700lbs.	11,700 lbs.
APB-25	99"	79"	128"	4,900lbs.	23,200 lbs.



These buoys are not intended for use in areas where ice may crust in excess of 2".

The padeye & cruciform of the **APB** Series buoys are removable to allow replacement if damaged and for more compact long term storage.

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*



HP SERIES HAWSEPIPE / GENERAL PURPOSE BUOYS

HP series buoys were designed as hawsepole buoys which can also be used as general purpose cylindrical buoys by changing their end plates.

- The **HP** series is made of closed cell, crosslinked polyethylene foam covered with a tough fabric reinforced Seathane[®] polyurethane skin.
- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

HP series buoys are not internally ballasted. This buoy is designed to float with the cylinder in a horizontal position. If it is preferred that a vertical position be maintained an underwater weight of 22% to 40% of the buoy's net buoyancy should be provided by the mooring.

Model No.	Diameter	Length	Pipe Size	Weight*	Net Buoyancy*
HP-24	24"	36"	3"	76 lbs.	503 lbs.
HP-36	36"	48"	4"	186 lbs.	1,555 lbs.
HP-48	48"	60"	6"	390 lbs.	3,465 lbs.
HP-60	60"	72"	6"	760 lbs.	6,520 lbs.

* Weight & net buoyancy are for the buoy without optional end plates.

These buoys are not intended for use in areas where ice may crust in excess of 2".

Seathane[®] is a trademark of Urethane Technologies, Inc.



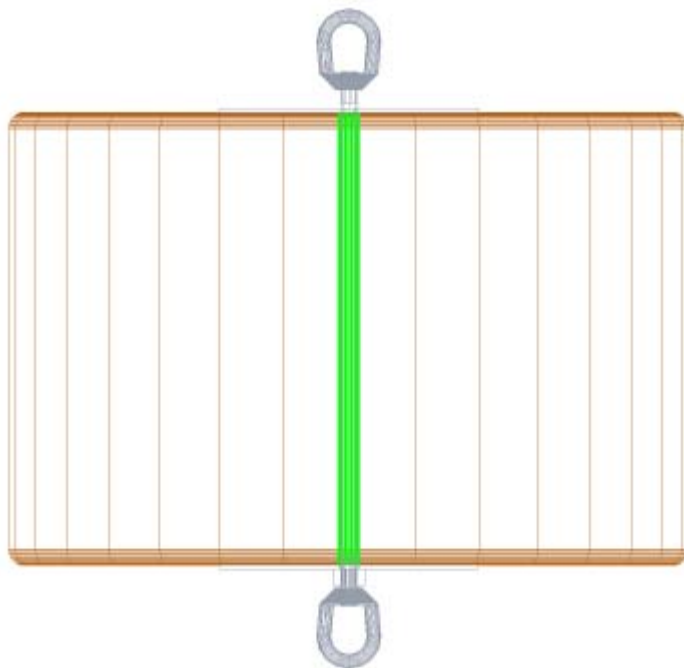
UB SERIES UTILITY BUOYS

UB series buoys were designed as utility buoys for supporting lines and other items.

- The **UB** buoys series are made of closed cell, crosslinked poly-ethylene foam covered with a tough fabric reinforced Seathane® polyurethane skin.

- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

UB series buoys are not internally ballasted. This buoy is designed to float with the cylinder in a vertical position. An underwater weight of 12% to 40% of the buoy's net buoyancy should be provided by the mooring.



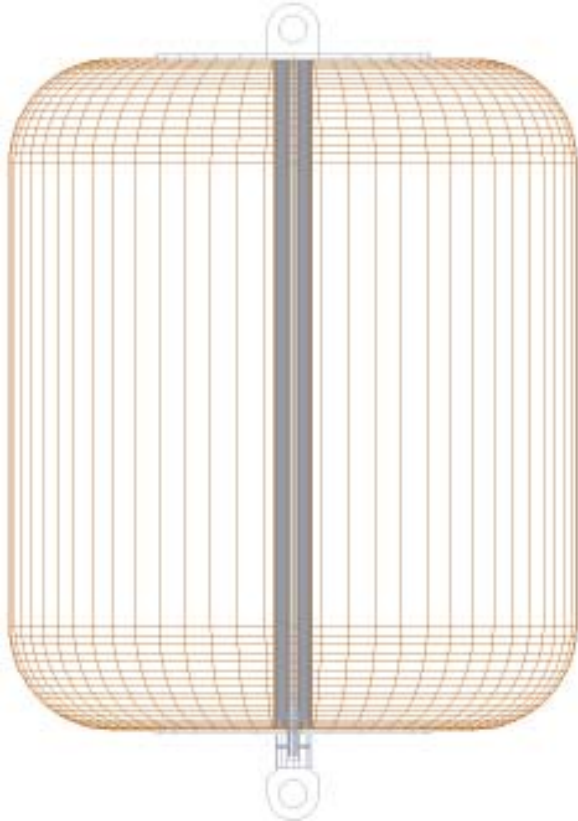
Model No.	Diameter	Height	Maximum Through Pull	Weight	Net Buoyancy
UB30-25	30"	25"	19,600 lbs.	80 lbs.	570 lbs.
UB42-28	42"	28"	19,600 lbs.	160 lbs.	1,275 lbs.



These buoys are not intended for use in areas where ice may crust in excess of 2".

Seathane® is a trademark of Urethane Technologies, Inc.

CCB SERIES CHAFE CHAINBUOYS



CCB series buoys were designed as chafe chain buoys which support the ends of chafing chains.

- The CCB series is made of closed cell, crosslinked polyethylene foam covered with a tough fabric reinforced Seathane® polyurethane skin.
- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

CCB series buoys are not internally ballasted .

Model No.	Diameter	Length	Weight	Net* Buoyancy
CCB-36	36"	42"	185 lbs.	1,330 lbs.
CCB-48	48"	56"	435 lbs.	3,170 lbs.
CCB-60	60"	72"	845 lbs.	6,35 lbs.
CCB-66	66"	78"	985 lbs.	8,435 lbs.

* Net buoyancy in sea water

These buoys are not intended for use in areas where ice may crust in excess of 2".

Seathane® is a trademark of Urethane Technologies, Inc.

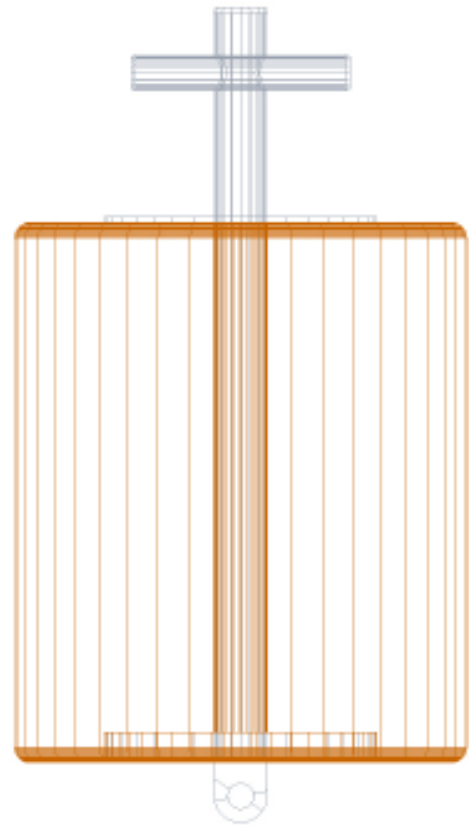


**PUB SERIES
PICK-UP BUOYS**

PUB series buoys were designed as pick-up buoys.

- The **PUB** series is made of closed cell, crosslinked polyethylene foam covered with a tough fabric reinforced Seathane® polyurethane skin.
- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

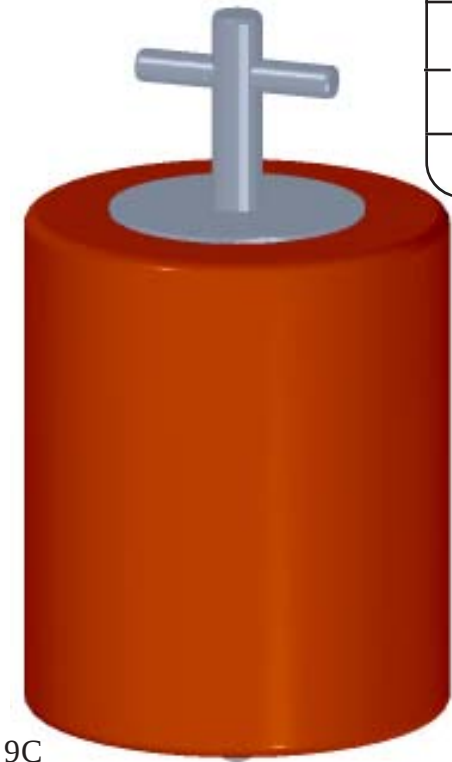
PUB series buoys are internally ballasted and do not require any additional weight to assume an upright position.



Model No.	Diameter	Float Height	Pipe Size	Weight	Net Buoyancy
PUB-30	30"	36"	3" Sch. 40	277 lbs.	635 lbs.
PUB-36	36"	44"	3" Sch. 80	465 lbs.	1,154 lbs.
PUB-42	42"	52"	4" Sch. 40	725 lbs.	1,855 lbs.
PUB-48	48"	58"	4" Sch. 80	1,120 lbs.	2,650 lbs.
PUB-54	54"	65"	6" Sch. 40	1,400 lbs.	3,915 lbs.
PUB-60	60"	72"	6" Sch. 80	1,910 lbs.	5,380 lbs.

These buoys are not intended for use in areas where ice may crust in excess of 2".

Seathane® is a trademark of Urethane Technologies, Inc.



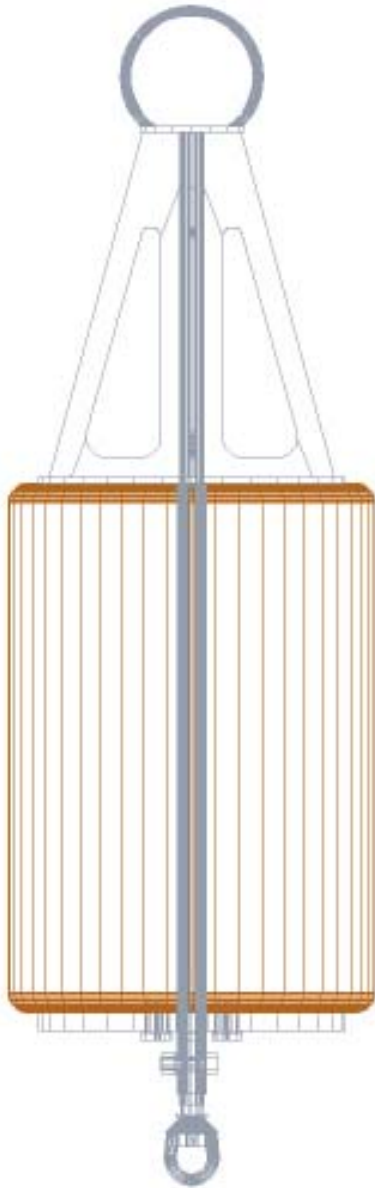
PUTB SERIES LARGE RING PICK-UP BUOYS

PUTB series buoys were designed as pick-up buoys for higher freeboard vessels.

- The **PUTB** buoys series are made of closed cell, crosslinked poly-ethylene foam covered with a tough fabric reinforced Seathane® polyurethane skin.

- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

PUTB series buoys are internally ballasted and do not require any additional weight to assume an upright position.



Model No.	Diameter	Float Cylinder Height	Overall Height	Weight	Net Buoyancy
PUTB-24	24"	36"	78½"	256 lbs.	352 lbs.
PUTB-30	30"	45"	98¼ "	455lbs.	721 lbs.
PUTB-36	36"	52"	116"	820 lbs.	1,135 lbs.
PUTB-42	42	63"	137½"	1,340 lbs.	1,745 lbs.
PUTB-48	48	72"	157¼"	1,505 lbs.	2,955 lbs.

These buoys are not intended for use in areas where ice may crust in excess of 2".

Seathane® is a trademark of Urethane Technologies, Inc.

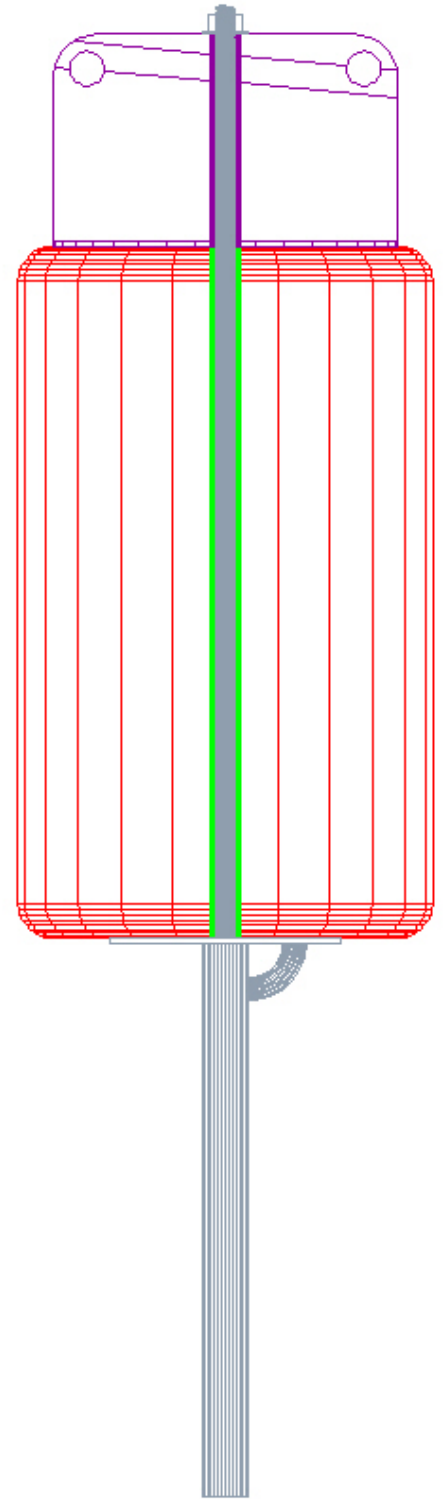


PCM SERIES CHANNEL MARKER BUOYS

The **PCM** series buoys were designed as channel marker buoys to designate navigatable waterways. There is no nun shape in this series. These buoys are normally available in a red or a green color with other colors optional.

- The **PCM** series is made of closed cell, crosslinked polyethylene foam covered with a tough fabric reinforced Seathane® polyurethane skin.
- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.
- Radar reflectors are made of aluminum.

Model No.	Diameter	Cylinder Height	Radar Reflector	Weight	Net Buoyancy
PCM-12	12"	24"	6" X 10"	22 lbs.	76 lbs.
PCM-18	18"	30"	9" X 15"	67 lbs.	205 lbs.
PCM-24	24"	36"	12" X 20"	139 lbs.	450 lbs.
PCM-30	30"	45"	15" X 26"	290 lbs.	860 lbs.



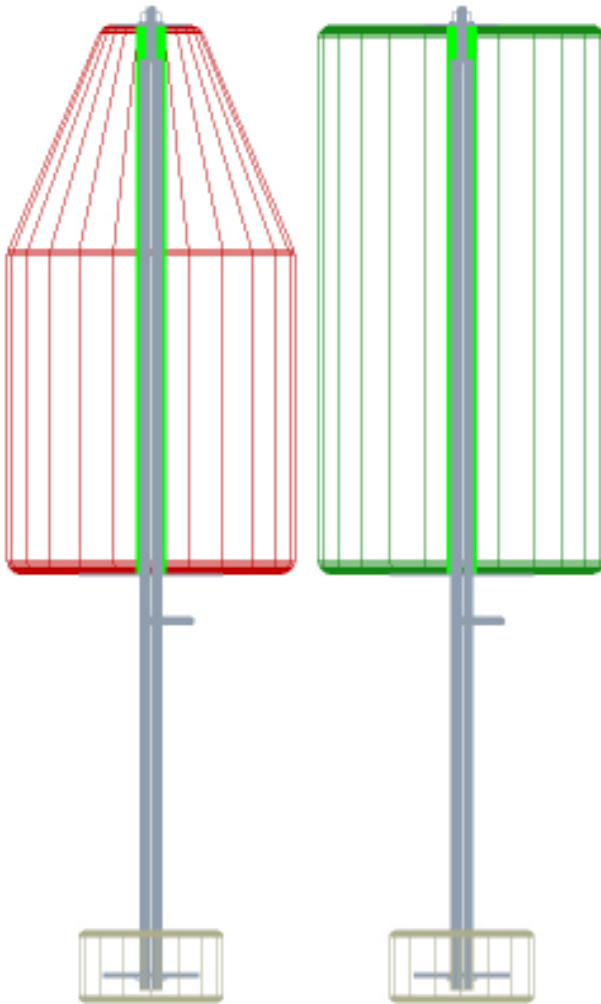
These buoys are not intended for use in areas where ice may crust in excess of 2".

Seathane® is a trademark of Urethane Technologies, Inc.

PMX SERIES CHANNEL MARKER BUOYS

PMX series buoys were designed as channel marker buoys to designate navigatable waterways. Both nun and can shapes are available in this series. These buoys are normally available in red nuns and green cans. Other colors are optional.

- The **PMX** series is made of closed cell, crosslinked polyethylene foam covered with a tough Seathane® polyurethane skin.
- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.
- Internal aluminum radar reflectors are optional.
- Counterweights are 3000 lb. mix type II concrete.



Model No.	Diameter	Cylinder Height	Overall Height	Nun Weight	Nun Net Buoyancy
PMX-18	18"	36"	62"	80 lbs.	240 lbs.
PMX-24	24"	46"	82"	130 lbs.	460 lbs.
PMX-30	30"	56"	96"	225 lbs.	885 lbs.

Note: Substitute a "C" (for a can) or a "N" (for a nun) in place of the "X" in the series number.

These buoys are not intended for use in areas where ice may crust in excess of 2".

Seathane® is a trademark of Urethane Technologies, Inc.

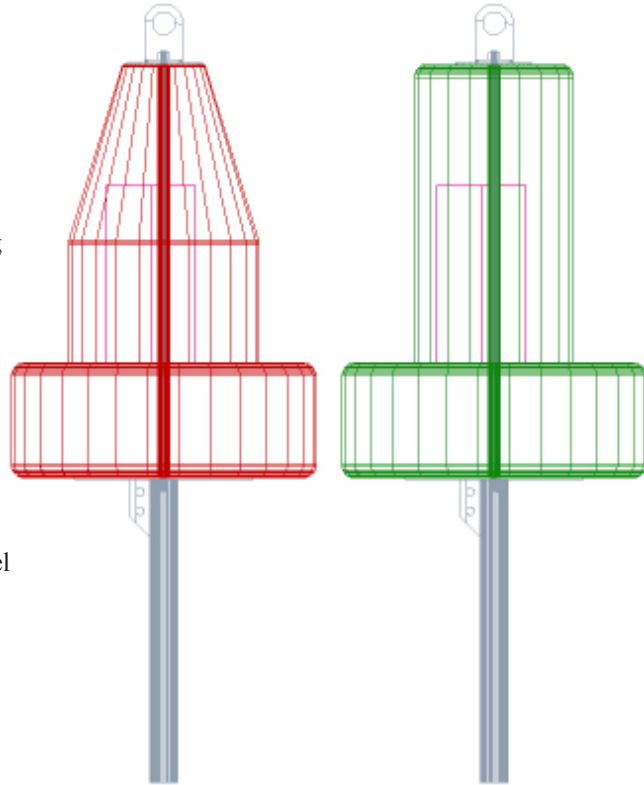


PCGX SERIES U.S.C.G. 1988 STYLE CHANNEL MARKERS

(Formerly PXFR Series)

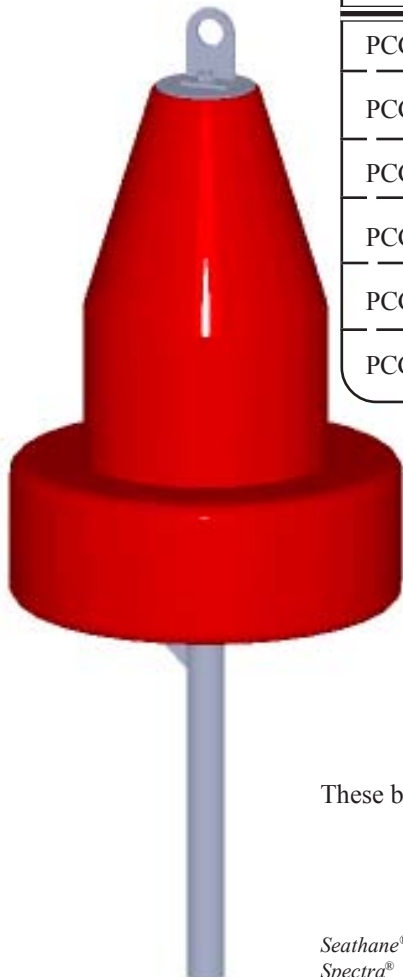
PCGX series buoys are basically channel markers designed by the U.S. Coast Guard for their use in marking navigatable waterways.

- The **PCGX** series is made of closed cell, cross-linked polyethylene foam covered with a tough fabric reinforced Seathane® polyurethane skin. Spectra® 900 high strength fabric is used on PCGX4 and larger sizes.
- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.
- Radar reflectors are made of aluminum and embedded internally in the foam of the upper cylinder.



Model No.	Base Dia./Hgt.	Can Top Dia./Hgt.	Overall Height	Weight	Net Buoyancy
PCGX6	24"/10"	13"/21"	63"	60 lbs.	205 lbs.
PCGX5	38"/14"	20"/34"	94"	145 lbs.	815 lbs.
PCGX4	48"/18"	25"/47"	123"	275 lbs.	1,735 lbs.
PCGX3	60"/22"	30"/58"	138"	635 lbs.	3,090 lbs.
PCGX2	72"/27"	36"/66"	153"	960 lbs.	5,430 lbs.
PCGX1	96"/36"	45"/72.5"	136"	2,220 lbs.	11,345 lbs.

Note: Substitute a "C" (for a can) or a "N" (for a nun) in place of the "X" in the series number.
Nun tops are larger diameter than corresponding can tops.



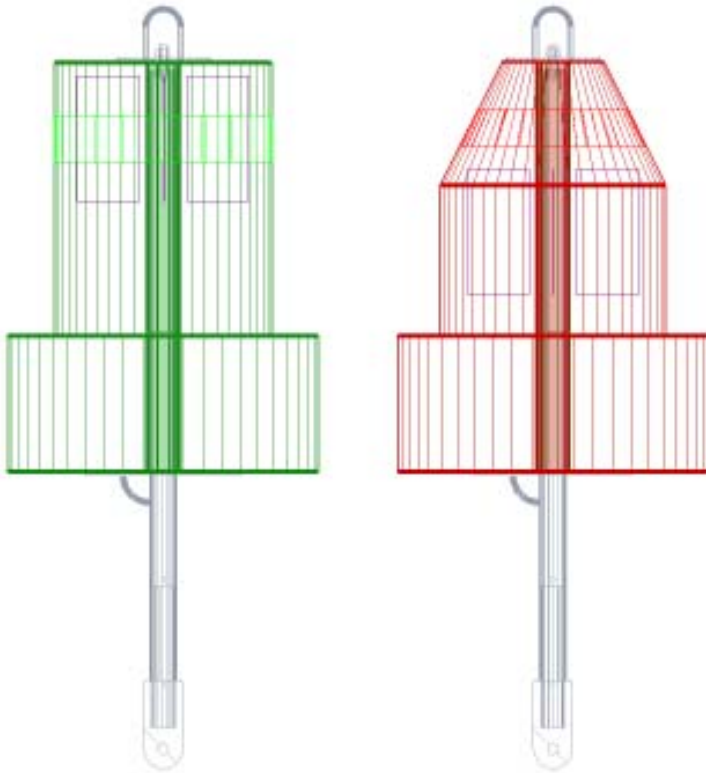
These buoys are not intended for use in areas where ice may crust in excess of 2".

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*

CGXX SERIES U.S.C.G. 1995 STYLE CHANNEL MARKERS

CGXX series buoys are basically channel markers designed by the U.S. Coast Guard for their use in marking navigatable waterways.

- The CGXX series is made of closed cell, cross-linked polyethylene foam covered with a tough fabric reinforced Seathane® polyurethane skin. Spectra® 900 high strength fabric is used on CG3X and larger sizes.
- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.
- Radar reflectors are made of aluminum and embedded internally in the foam of the upper cylinder.



Model No.	Base Dia./Hgt.	Can Top Dia./Hgt.	Overall Height	Weight	Net Buoyancy*
CG6C	20"/36"	- / -	76"	83 lbs.	328 lbs.
CG6N	21"/36"	- / -	76"	81 lbs.	306 lbs.
CG6TC	24"/44"	- / -	78"	132 lbs.	593 lbs.
CG6TN	25"/44"	- / -	78"	131 lbs.	533 lbs.
CG5C	30"/14"	20"/27"	78"	131 lbs.	535 lbs.
CG5N	30"/14"	21"/27"	78"	129 lbs.	504 lbs.
CG4C	40"/18"	28"/35"	95"	276 lbs.	1,310 lbs.
CG4N	48"/18"	29"/35"	95"	268 lbs.	1,205 lbs.
CG3C	50"/22"	32"/40"	107"	637 lbs.	2,085 lbs.
CG3N	50"/22"	33"/40"	107"	627 lbs.	1,930 lbs.
CG2C	64"/32"	41"/54"	155"	1,252 lbs.	5,060 lbs.
CG2N	64"/32"	42"/54"	155"	1,215 lbs.	4,620 lbs.

Note: A "C" in the model number designates a can.

A "N" in the model number designates a nun

Nun tops are larger diameter than corresponding can tops.

* Net buoyancy in fresh water,

These buoys are not intended for use in areas where ice may crust in excess of 2".

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*



FAST WATER BUOYS & CHANNEL MARKERS

Our fast water buoys were designed for use in waterways where currents in excess of 6 knots are encountered. These buoys are used as channel marker, regulatory, warning or informational buoys.

- Our fast water buoys are made of closed cell, crosslinked polyethylene foam covered with a tough Seathane® polyurethane skin.
- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional. The CAT and BARG series buoys have 5086 aluminum upper structures.
- Internal radar reflectors in the CG XFW series are made of aluminum.

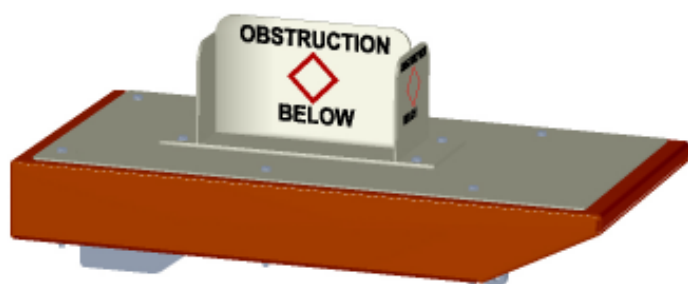
CG5FWN & CG5FWC Fast
Water Channel Markers For
Currents Up To 9 Knots



CAT-FW Series Catamaran Buoys
For Currents Up To 22 Knots



BARG Series Buoys For Currents Up To 17 Knots



These buoys are not intended for use in areas where ice may crust in excess of 2".

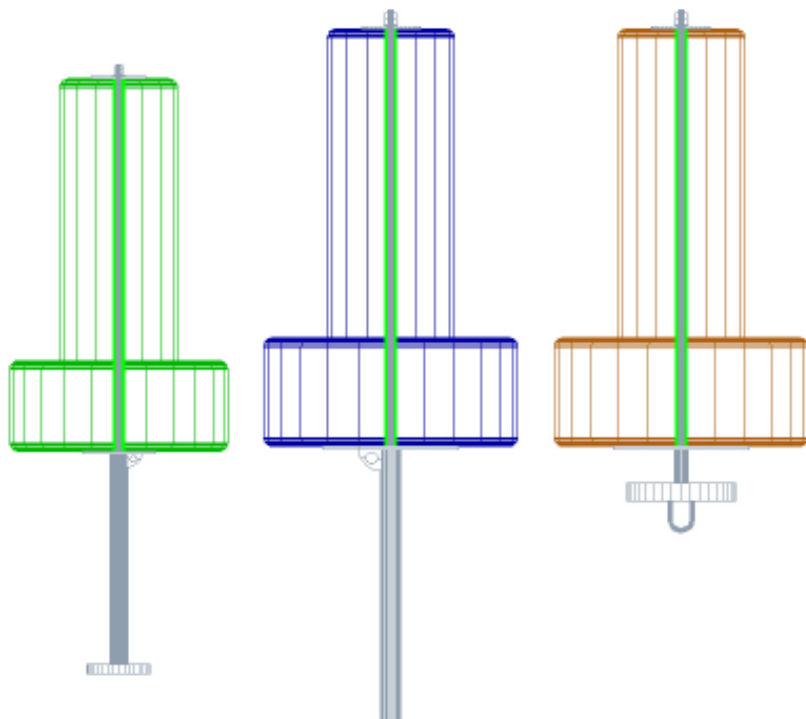
Seathane® is a trademark of Urethane Technologies, Inc.

PDM SERIES GENERAL PURPOSE MARKER BUOYS

PDM series buoys are designed as general purpose marker buoys. Only can shapes available in this series. These buoys are normally available in red, green, yellow, or white with other colors optional.

- The **PDM** series is made of closed cell, crosslinked polyethylene foam covered with a tough Seathane® polyurethane skin.

- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

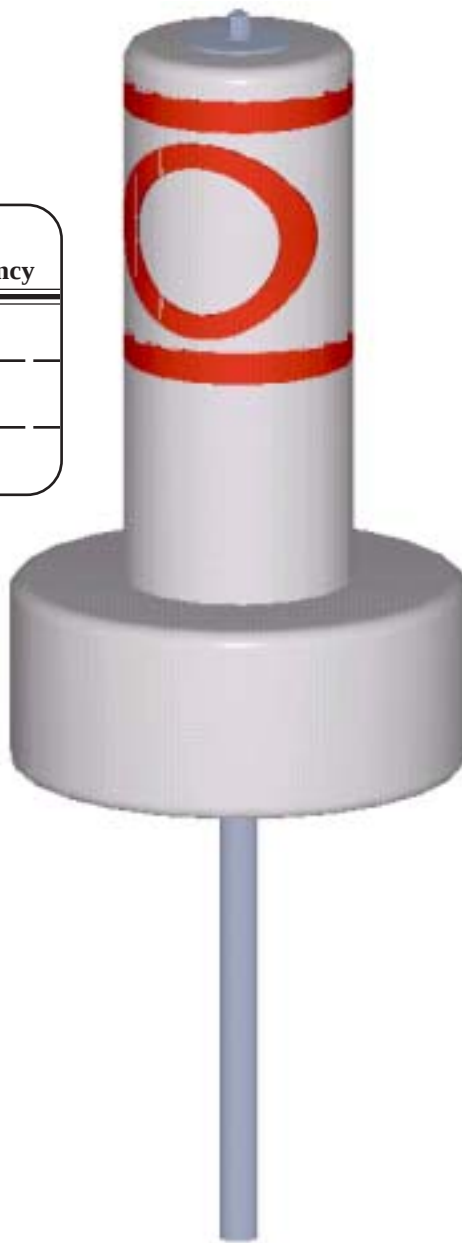


- Internal aluminum radar reflectors are optional.

Model No.	Diameter	Cylinder Height	Overall Height	Weight	Net Buoyancy
PDM-24	24"	41"	67"	50 lbs.	275 lbs.
PDM-28L	28"	46"	77"	95 lbs.	445 lbs.
PDM-28S	28"	46"	56"	130 lbs.	415 lbs.

These buoys are not intended for use in areas where ice may crust in excess of 2".

Seathane® is a trademark of Urethane Technologies, Inc.



PRMW SERIES REGULATORY / WARNING MARKER BUOYS

PRMW series buoys are designed as regulatory / warning marker buoys. These buoys are normally white with orange markings and black lettering. There are three basic variations of markings for this buoy:

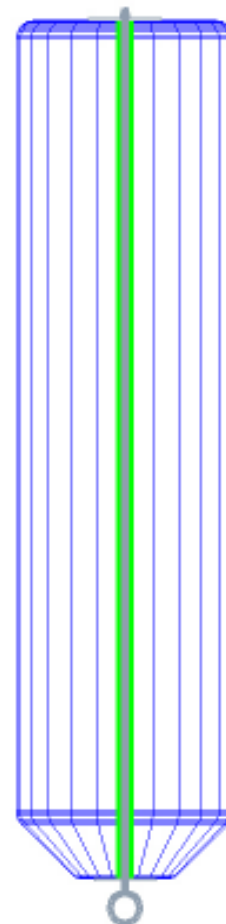
1. Regulation - Circle (examples: "NO WAKE", "5 MPH", "SLOW")
2. Warning - Diamond (examples: "ROCK", "SHALLOW")
3. Information - Square (examples: "WHITE LAKE - 7 MILES")

- The **PRMW** series is made of closed cell, crosslinked polyethylene foam covered with a tough fabric reinforced Seathane® polyurethane skin.

- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

- An internal aluminum radar reflector is optional.

PRMW series buoys are available in ballasted and un-ballasted versions. The un-ballasted version depends on the weight of the mooring to maintain a proper attitude. An underwater weight of 20% to 40% of the un-ballasted buoy's net buoyancy should be provided by the mooring.



Model No.	Diameter	Cylinder Height	Overall Height	Weight	Net Buoyancy*
PRMW-12	12"	54"	58"	24 lbs.	191 lbs.
PRMW-14	14"	59"	63"	32 lbs.	313 lbs.
PRMW-18	18"	72"	77"	49 lbs.	592 lbs.
PRMW-24	24"	96"	103"	151 lbs.	1,367 lbs.
PRMW-30	30"	120"	129"	321 lbs.	2,682 lbs.

* Net buoyancy in fresh water.

These buoys are not intended for use in areas where ice may crust in excess of 2".

A self ballasted version of these buoys is also available.

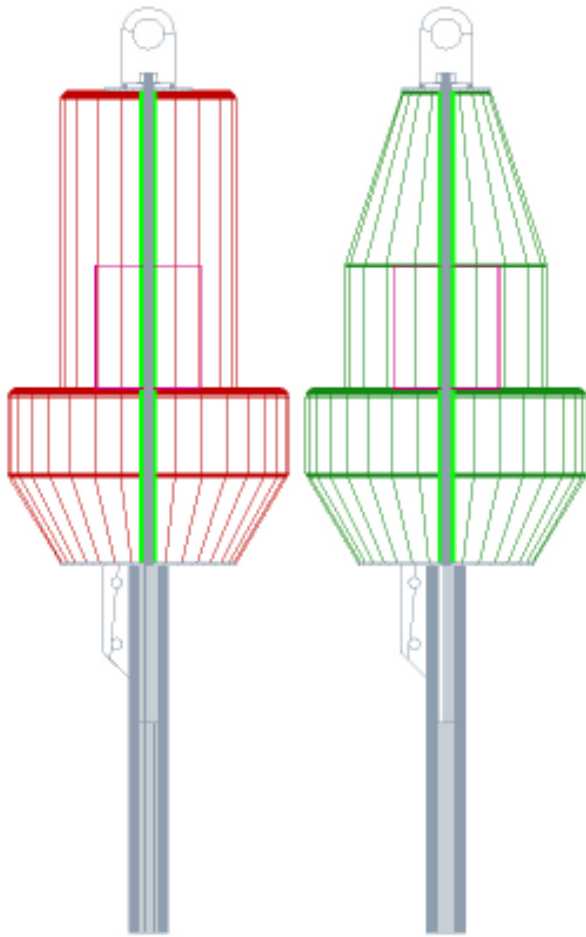
Shown at left with optional light.

Seathane® is a trademark of Urethane Technologies, Inc.

Also available in a ballasted version



POMX SERIES CHANNEL MARKER BUOYS



POMX series buoys are designed as channel marker buoys to designate navigatable fairways in offshore conditions. Both nun and can shapes available in this series. These buoys are normally available in red nuns and green cans with other colors optional.

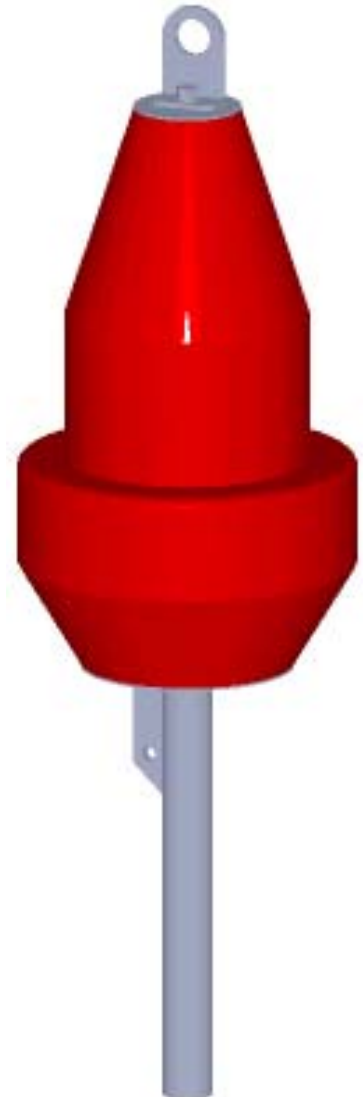
This series also has better debris shedding characteristics than normal surface riding channel markers, and, as such, works quite well in rivers where large amounts of debris are encountered.

- The **POMX** series is made of closed cell, crosslinked polyethylene foam covered with a Spectra® high strength fabric reinforced Seathane® polyurethane skin.
- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.
- Internal aluminum radar reflectors are optional.

These buoys are self-righting and do not depend on weight provided by their mooring.

Model No.	Base Dia./Hgt.	Nun Top Dia./Hgt.	Overall Height	Nun Weight	Nun Net Buoyancy
POMXA	32"/20"	23"/60"	138"	280 lbs.	750 lbs.
POMXB	32"/20"	23"/34"	106"	220 lbs.	635 lbs.
POMXC	48"/30"	33"/84"	174"	900 lbs.	2,620 lbs.
POMXD	48"/30"	33"/50"	128"	710 lbs.	2,070 lbs.

Note: Substitute a "C" (for a can) or a "N" (for a nun) in place of the "X" in the series number.



*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*

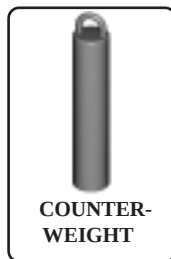
PWVM SERIES SPAR MARKER BUOYS FOR VARYING WATER LEVELS

PWVM series buoys are designed as spar channel marker buoys or regulatory/warning buoys for semi-protected waters in resevoirs where the water level varies highly at different seasons of the year. They utilize a seperate counterweight system that takes up excess line by lowering the counterweight.

- The **PWVM** series is made of closed cell, crosslinked polyethylene foam covered with a tough Seathane® polyurethane skin.
- Steel components of these buoys are hot dip galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

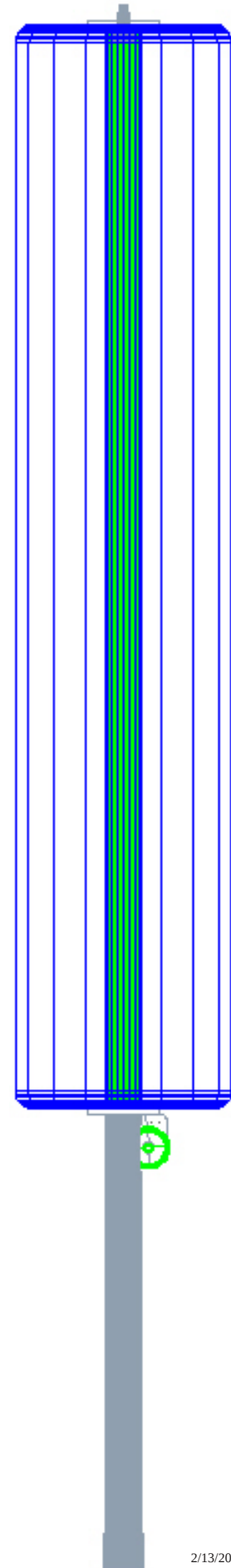
The **PWVM** series buoys are ballasted by means of its variable level counterweight and do not depend on the weight of its mooring to maintain a proper attitude.

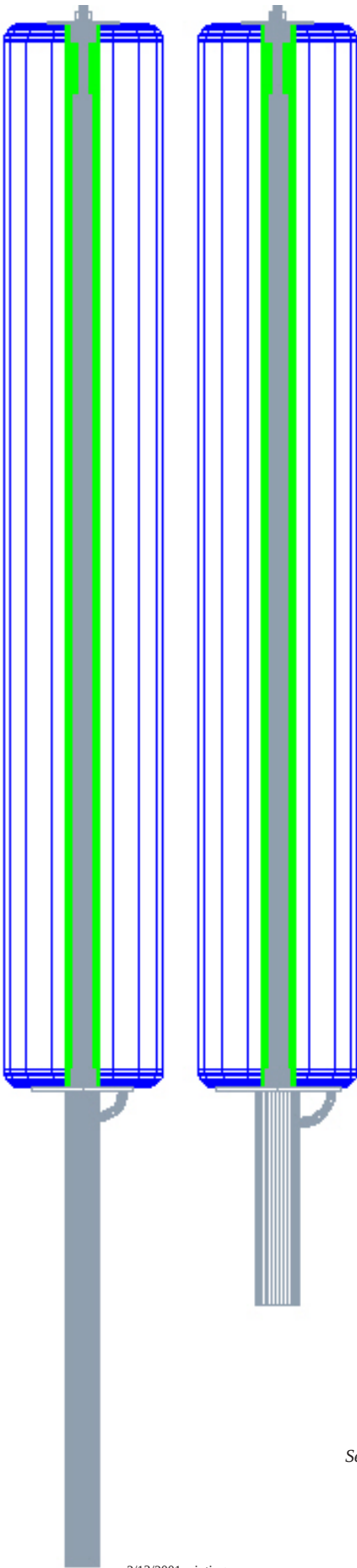
Model No.	Diameter	Cylinder Height	Overall Height	Weight	Net Buoyancy
PWVM-8	8"	60"	86"	35 lbs.	75 lbs.
PWVM-9	9"	60"	89"	39 lbs.	100 lbs.
PWVM-12	12"	60"	94"	75 lbs.	175 lbs.



These buoys are not intended for use in areas where ice may crust in excess of 2".

Seathane® is a trademark of Urethane Technologies, Inc.





PWFM SERIES SPAR MARKER BUOYS

Series buoys are designed as spar channel marker buoys or regulatory/warning buoys for semi-protected waters.

- The **PWFM** series is made of closed cell, crosslinked polyethylene foam covered with a tough Seathane® polyurethane skin.
- Steel components of these buoys are hot dip galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

PWFM series buoys are internally ballasted and do not depend on the weight of its mooring to maintain a proper attitude.

Model No.	Diameter	Cylinder Height	Overall Height	Weight	Net Buoyancy
PWFM-8	8"	60"	87"	32 lbs.	78 lbs.
PWFM-9	9"	60"	87"	35 lbs.	105 lbs.
PWFM-12	12"	60"	90"	92 lbs.	160 lbs.
PWFM-15	15"	60"	90"	133 lbs.	258 lbs.

These buoys are also available in a shallower draft version with a 14" shorter (18" for **PWFM-12 & PWFM-15**) base. This version is heavier than the standard buoy.

These buoys are not intended for use in areas where ice may crust in excess of 2".



Seathane® is a trademark of Urethane Technologies, Inc.

RMX SERIES ARTIFICIAL REEF MARKER BUOYS

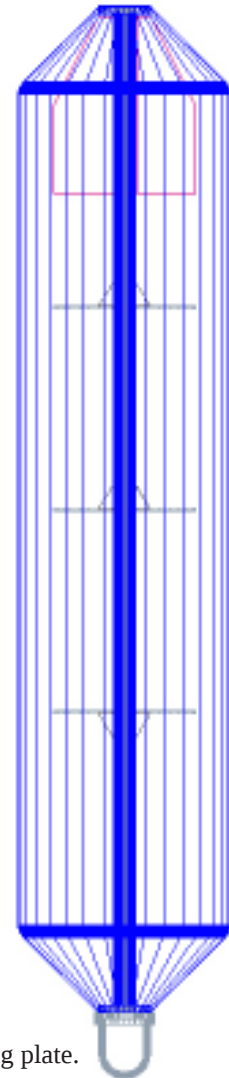
RMX series buoys are designed as special purpose marker buoys for artificial fishing reefs. These buoys are normally yellow in color. They are also used as well head or subsea completion marker buoys in a red and white horizontal stripe design. This series uses a internal aluminum radar reflector. Also see the **RM** series reef marker which utilizes a external bolt-on aluminum radar reflector and the **RML** Series which is the lighted version of this buoy.

RMX Series: Made of closed cell, crosslinked polyethylene foam covered with a Spectra® high strength fabric reinforced Seathane® polyurethane skin. We do not offer an economy version because of the harsh conditions that this type of buoy must endure.

Steel components of these buoys are 304 stainless steel. The radar reflector is aluminum and is embedded internally in the polyethylene foam. A bolt-on mooring plate is also required for attaching the buoy to its mooring. The mooring plate can be attached with :

- 5/8"-11NC (1/2"-13NC for **RMX-18**) 18-8 stainless steel hex head bolts or
- Anti-theft **PBT-50** pentagon head bolts available from Urethane Technologies.

RMX series buoys are not internally ballasted. They depend on the weight of the mooring to maintain a proper attitude. An underwater weight of 22% to 40% of the buoy's net buoyancy should be provided by the mooring.



Dimensions below are without mooring plate.

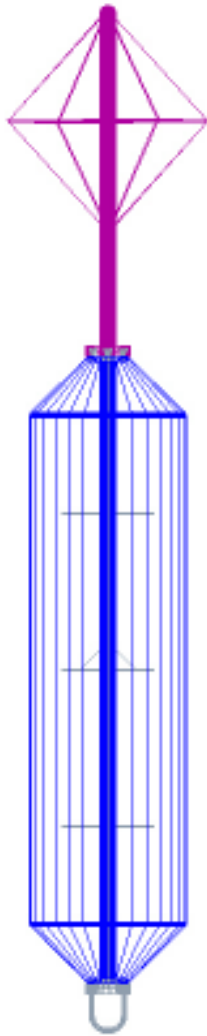
Model No.	Diameter	Overall Height	Flange & Pipe Size	Weight	Net Buoyancy
RMX-18	18"	114"	1-1/2"-150#	130 lbs.	875 lbs.
RMX-24	24"	114"	2"-150#	210 lbs.	1,525 lbs.
RMX-30	30"	135"	3"-150#	350 lbs.	2,850 lbs.

These buoys are not intended for use in areas where ice may crust in excess of 4".

The **RMX** Series buoy shown herein is depicted with an optional mooring plate.

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*

RM SERIES ARTIFICIAL REEF MARKER BUOYS



RM series buoys are designed as special purpose marker buoys for artificial fishing reefs. These buoys are normally yellow in color. They are also used as well head or subsea completion marker buoys in a red and white horizontal stripe design. This series uses a detachable aluminum radar reflector. Also see the **RMX** series reef marker which has an internal radar reflector.

The **RM** Series is made of closed cell, crosslinked polyethylene foam covered with a Spectra® high strength fabric reinforced Seathane® polyurethane skin. We do not offer an economy version foam because of the harsh conditions that this type of buoy must endure.

Steel components of these buoys are 304 stainless steel. Radar reflectors are aluminum. Both tall and short versions of the radar reflector are available. A bolt-on mooring plate is also required for attaching the buoy to its mooring. The mooring plate and radar reflector can be attached with :

- 5/8"-11NC (1/2"-13NC for **RM-12** & **RM-18**) 18-8 stainless steel hex head bolts or
- Anti-theft **PBT-50** pentagon head bolts available from Urethane Technologies.

RM series buoys are not internally ballasted. They depend on the weight of the mooring to maintain a proper attitude. An underwater weight of 25% to 40% of the buoy's net buoyancy should be provided by the mooring.

Dimensions below are without mooring plate and radar reflector.

Model No.	Diameter	Overall Height	Flange & Pipe Size	Weight	Net Buoyancy
RM-12	12"	54"	1"-150#	25 lbs.	180 lbs.
RM-18	18"	81"	1-1/2"-150#	80 lbs.	605 lbs.
RM-24	24"	108"	2"-150#	180 lbs.	1,450 lbs.
RM-30	30"	135"	3"-150#	350 lbs.	2,850 lbs.

These buoys are not intended for use in areas where ice may crust in excess of 4".

The **RM** Series buoy shown herein is depicted with an optional mooring plate & radar reflector.

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*



RMX-L SERIES LIGHTED SPAR MARKER BUOYS

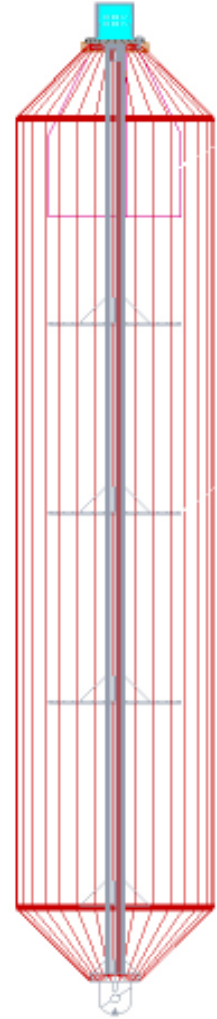
RMX-L lighted series buoys are designed as lighted spar marker buoys for marking the location of wrecks, underwater obstructions and/or artificial fishing reefs. These buoys are normally yellow in color with an amber light. They are also used as well head or subsea completion marker buoys in a red and white horizontal stripe design. This series uses a internal aluminum radar reflector. Also see the RMX - L series reef marker which is the unlighted version of this buoy.

RMX - L lighted series buoys are made of closed cell, crosslinked polyethylene foam covered with a Spectra® 900 high strength fabric reinforced Seathane® polyurethane skin.

Steel components of these buoys are 304 stainless steel. The radar reflector is aluminum and is embedded internally in the polyethylene foam. These buoys are have a fixed padeye at the botton for shackle attachment.

These buoys utilize the M°Dermott 'TOP HAT' light with a self-contained solar panel, battery and sun switch.

The RMX - L lighted series buoys are not internally ballasted. They depend on the weight of the mooring to maintain a proper attitude. An underwater weight of 22% to 38% of the buoy's net buoyancy should be provided by the mooring.



Model Nb.	Diameter	Overall Height	Flange & Pipe Size	Weight	Net Buoyancy
RMX-18L	18"	125"	1-1/2"-150#	130 lbs.	875 lbs.
RMX-24L	24"	125"	2"-150#	210 lbs.	1,525 lbs.
RMX-30L	30"	146"	3"-150#	350 lbs.	2,850 lbs.

These buoys are not intended for use in areas where ice may crust in excess of 4".

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*

PCLM SERIES LIGHTED GENERAL PURPOSE MARKER BUOYS

PCLM series buoys are designed as lighted general purpose / channel marker buoys. There are only can shapes available in this series. These buoys are normally available in white, yellow, red or green with other colors optional. They also make a good lighted version of a warning or regulatory marker when used with a can shaped top in a white color with orange markings and black letters.

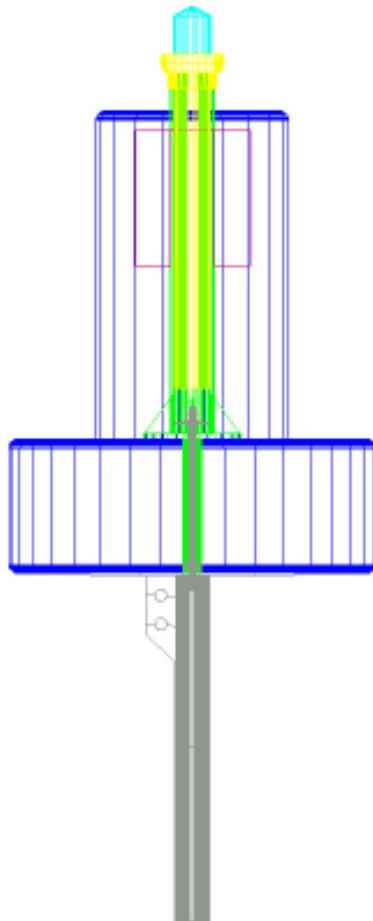
They are designed to accept a McDermott 6 or 8 battery 'BUNY' or 'Top Hat' buoy light. This light is available in a number of different lens colors, flash rates, and ranges.

- The PCLM series is made of closed cell, crosslinked polyethylene foam covered with a Spectra® high strength fabric reinforced Seathane® polyurethane skin.

- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

- Internal aluminum radar reflectors are standard.

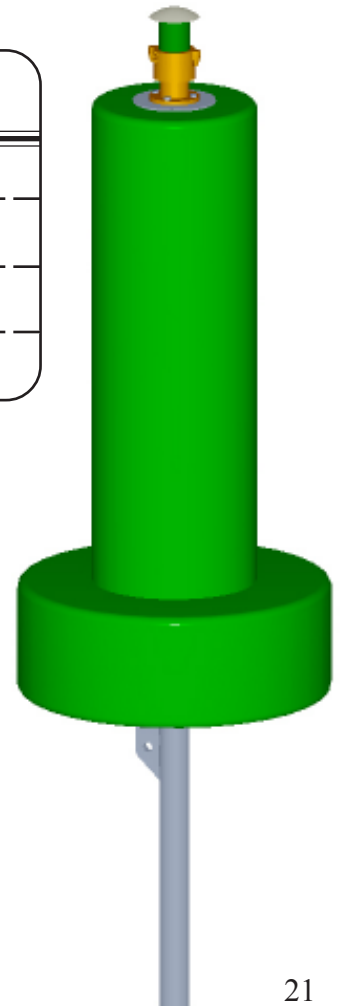
These buoys are self righting and do not depend on weight provided by their mooring.



Model No.	Base Dia./Hgt.	Top Dia./Hgt.	Overall Height	Weight	Net Buoyancy
PCLMA	38"/14"	20"/34"	95"	205 lbs.	767 lbs.
PCLMB	38"/14"	20"/60"	131"	270 lbs.	996 lbs.
PCLMC	48"/18"	30"/50"	127"	430 lbs.	2,020 lbs.
PCLMD	48"/18"	30"/84"	161"	550 lbs.	2,520 lbs.

These buoys are not intended for use in areas where ice may crust in excess of 2".

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*



PPLM SERIES LIGHTED PIPELINE MARKER BUOYS

PPLM series buoys are designed as lighted pipeline marker buoys to designate pipelines located in shallow water which are less than one foot below the mudline. There are only can shapes available in this series. These buoys are normally available in yellow with other colors optional. They aid the pipeline operator in his efforts to comply with the Department of Transportation public law 101-599. Both buoys in this series will exceed the Coast Guard's 1 meter minimum for the light's focal center above the waterline.

They are designed to accept a McDermott 6 or 8 battery 'BUNY' or 'Top HAT' buoy light. This light is available in a number of different lens colors, flash rates, and ranges. However, for use as a pipeline marker they must have :

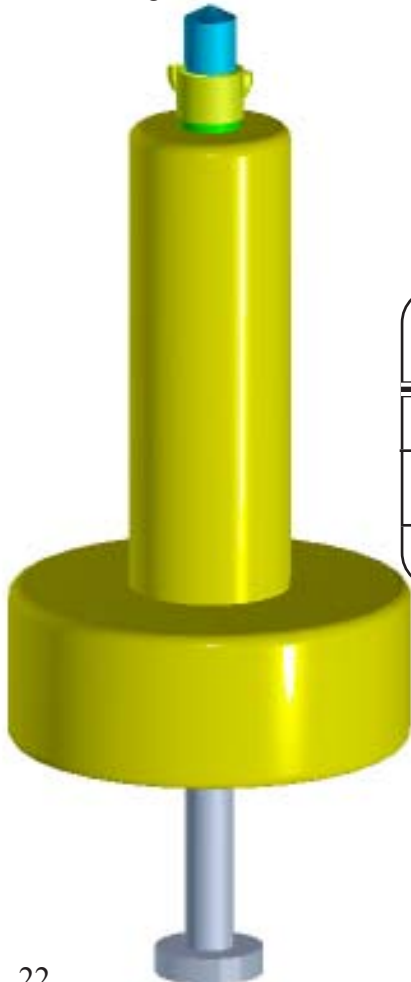
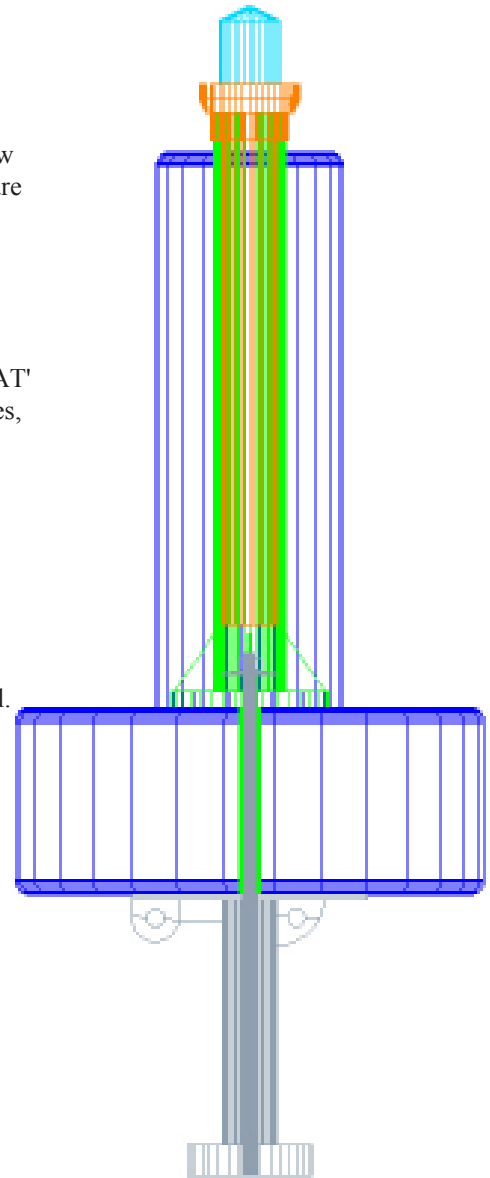
- A yellow (or amber) lens
- Flash at a 30 flash per minute rate
- A one mile minimum range

- The **PPLM** series is made of closed cell, crosslinked polyethylene foam covered with a fabric reinforced Seathane® polyurethane skin.

- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

Internal aluminum radar reflectors are not available.

These buoys are self-righting and do not depend on weight provided by their mooring.



Model No.	Base Dia./Hgt.	Top Dia./Hgt.	Overall Height	Weight	Net Buoyancy
PPLMS ^{Note 1}	30"/12"	12"/35.5"	75"	120 lbs.	345 lbs.
PPLMT ^{Note 2}	30"/12"	12"/35.5"	93.25"	115 lbs.	350 lbs.
PPLML ^{Note 1}	38"/14"	12"/59"	97"	200 lbs.	653 lbs.

Note 1: Shallow water base

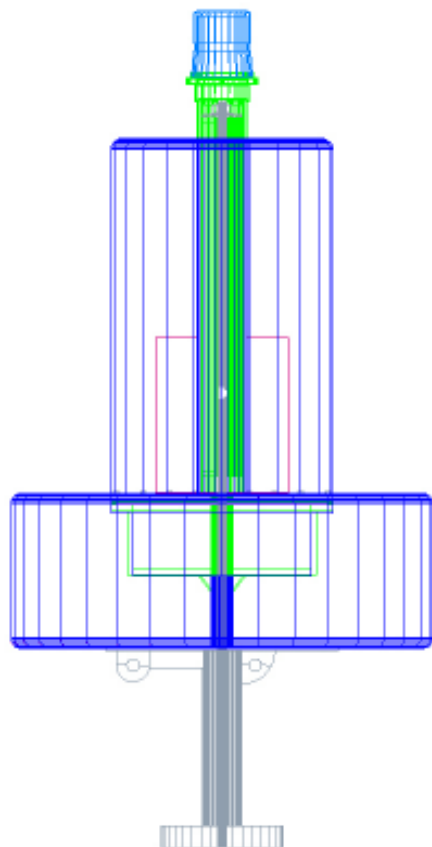
Note 2: Deep water base

These buoys are not intended for use in areas where ice may crust in excess of 2".

These buoys also make a very good lighted regulatory / warning marker buoy when purchased in a white color with the appropriate red bands and symbol.

Seathane® is a trademark of Urethane Technologies, Inc.

PPLT SERIES LIGHTED PIPELINE MARKER BUOYS



PPLT series buoys are designed as lighted pipeline marker buoys to designate pipelines located in shallow water which are less than one foot below the mudline. There are only can shapes available in this series. These buoys are normally available in yellow with other colors optional. They aid the pipeline operator in his efforts to comply with the Department of Transportation public law 101-599. Both buoys in this series will exceed the Coast Guard's 1 meter minimum for the light's focal center above the waterline.

They are designed to accept a Tidelands Signal ML-120 model buoy light which is powered by gel cell batteries located in a compartment in the lower cylinder of the buoy. This light is available in a number of different lens colors, flash rates, and ranges. However, for use as a pipeline marker they must have :

- A yellow (or amber) lens
- Flash at a 30 flash per minute rate
- A one mile range

- The **PPLT** series is made of closed cell, crosslinked polyethylene foam covered with a fabric reinforced Seathane[®] polyurethane skin.

- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

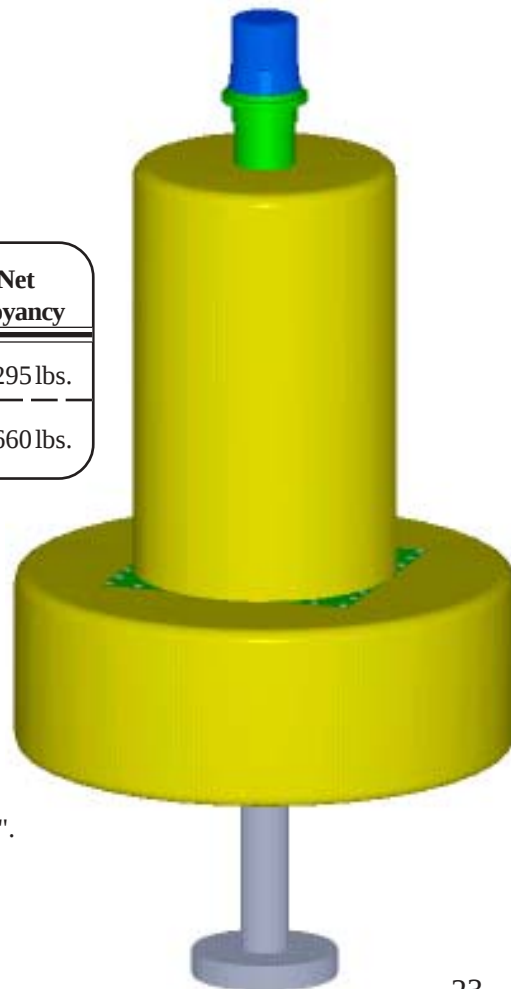
- A Internal aluminum radar reflector is not available for the **XPLTS** model, but is standard for the **XPLTL** model.

Model No.	Base Dia./Hgt.	Top Dia./Hgt.	Overall Height	Weight	Net Buoyancy
PPLTS	30"/12"	12"/35.5"	75"	170lbs.	295lbs.
PPLTL	38"/14"	20"/32"	76"	300lbs.	660lbs.

These buoys are self-righting and do not depend on weight provided by their mooring.

These buoys are not intended for use in areas where ice may crust in excess of 2".

Seathane[®] is a trademark of Urethane Technologies, Inc.

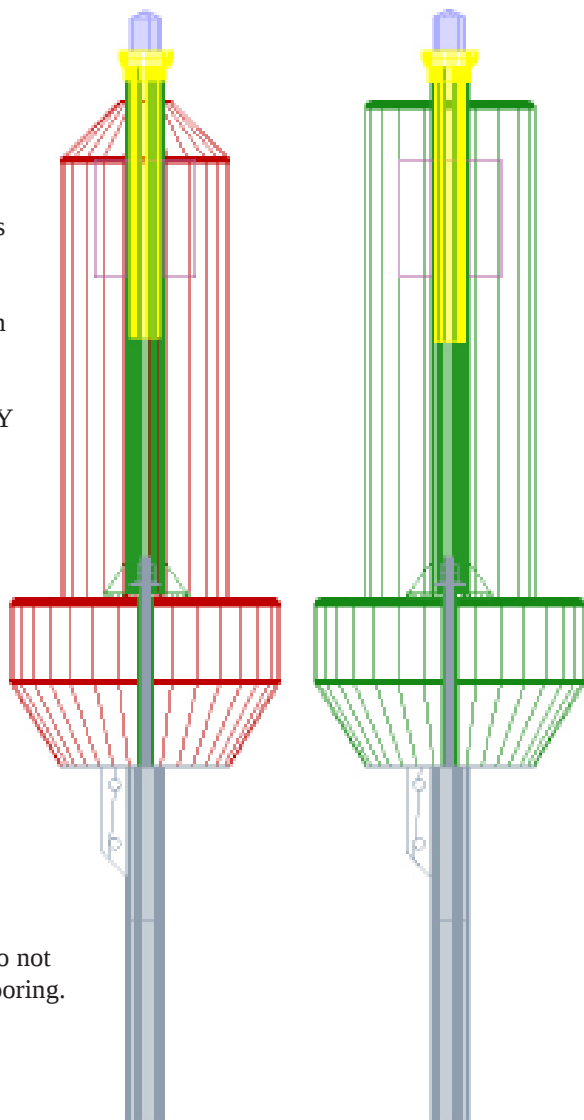


POLM SERIES OFFSHORE LIGHTED CHANNEL MARKER BUOYS

POLM series buoys are designed as lighted channel marker buoys to designate navigatable fairways in offshore conditions. Both can and nun shapes are available in this series. These buoys are normally available in white, yellow, red or green with other colors optional. They also make a good lighted version of a warning or regulatory marker when used with a can shaped top in a white color with orange markings and black letters.

They are designed to accept a McDermott 6 or 8 battery BUNY model buoy light. This light is available in a number of different lens colors, flash rates, and ranges.

- The **POLM** series is made of closed cell, crosslinked polyethylene foam covered with a Spectra® high strength fabric reinforced Seathane® polyurethane skin.
- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.
- Internal aluminum radar reflectors are standard.



These buoys are self-righting and do not depend on weight provided by their mooring.



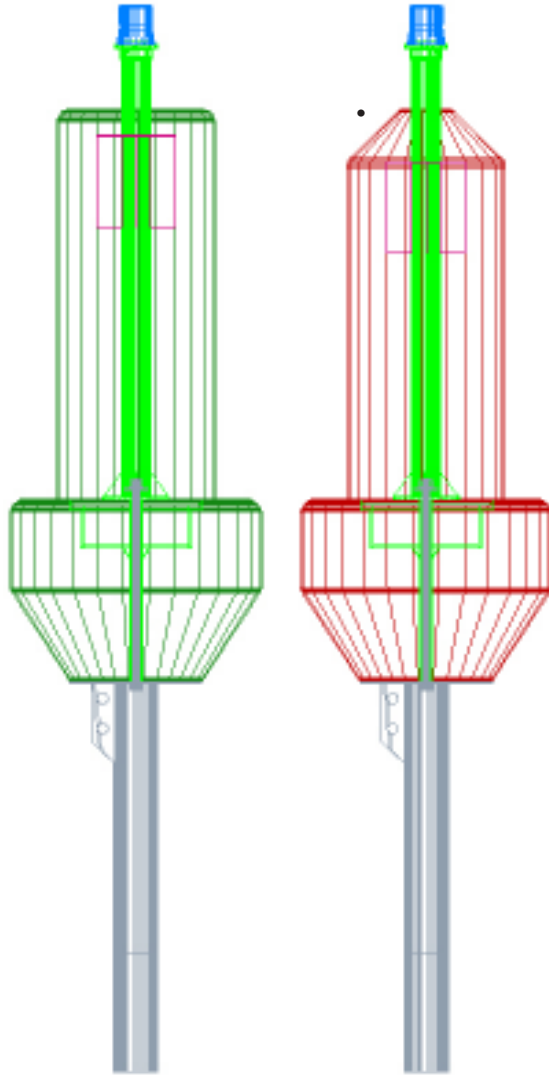
Model No.	Base Dia./Hgt.	Top Dia./Hgt.	Overall Height	Weight	Net Buoyancy
POLMA	32"/20"	20"/59"	132"	260 lbs.	945 lbs.
POLMB	32"/20"	20"/59"	132"	255 lbs.	885 lbs.
POLMC	32"/20"	20"/34"	107"	240 lbs.	675 lbs.
POLMD	32"/20"	23"/34"	107"	235 lbs.	615 lbs.
POLME	38"/28"	24"/60"	163"	430 lbs.	1,450 lbs.
POLMF	38"/28"	24"/60"	163"	450 lbs.	1,500 lbs.

POLMA, POLMC & POLMF are can shaped tops / **POLMB, POLMD & POLME** are nun shaped tops.

These buoys are not intended for use in areas where ice may crust in excess of 4".

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*

POLT SERIES OFFSHORE LIGHTED CHANNEL MARKER BUOYS



POLT series buoys are designed as lighted channel marker buoys to designate navigatable fairways in offshore conditions. Both can and nun shapes are available in this series. These buoys are normally available in white, yellow, red or green with other colors optional. They also make a good lighted version of a warning or regulatory marker when used with a can shaped top in a white color with orange markings and black letters.

They are designed to accept a Tidelands-Signal Model ML-120 buoy light. The lower cylinder of each of these buoys has a compartment for up to eight (8) Tidelands V6T gel cell batteries. An optional solar panel and mounting frame are available. This light is available in a number of different lens colors, flash rates, and ranges.

- The **POLT** series is made of closed cell, crosslinked polyethylene foam covered with a Spectra® 900 high strength fabric reinforced Seathane® polyurethane skin.
- Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.
- Internal aluminum radar reflectors are standard.

These buoys are self-righting and do not depend on weight provided by their mooring.

Model No.	Base Dia./Hgt.	Top Dia./Hgt.	Overall Height	Weight	Net Buoyancy
POLTA	38"/28"	24"/60"	164"	545 lbs.	1,400 lbs.
POLTB	38"/28"	24"/60"	164"	545 lbs.	1,400 lbs.

Weight above includes eight (8) V6T batteries.

POLTB has a can shaped top / **POLTA** has a nun shaped top.

These buoys are not intended for use in areas where ice may crust in excess of 4".

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*



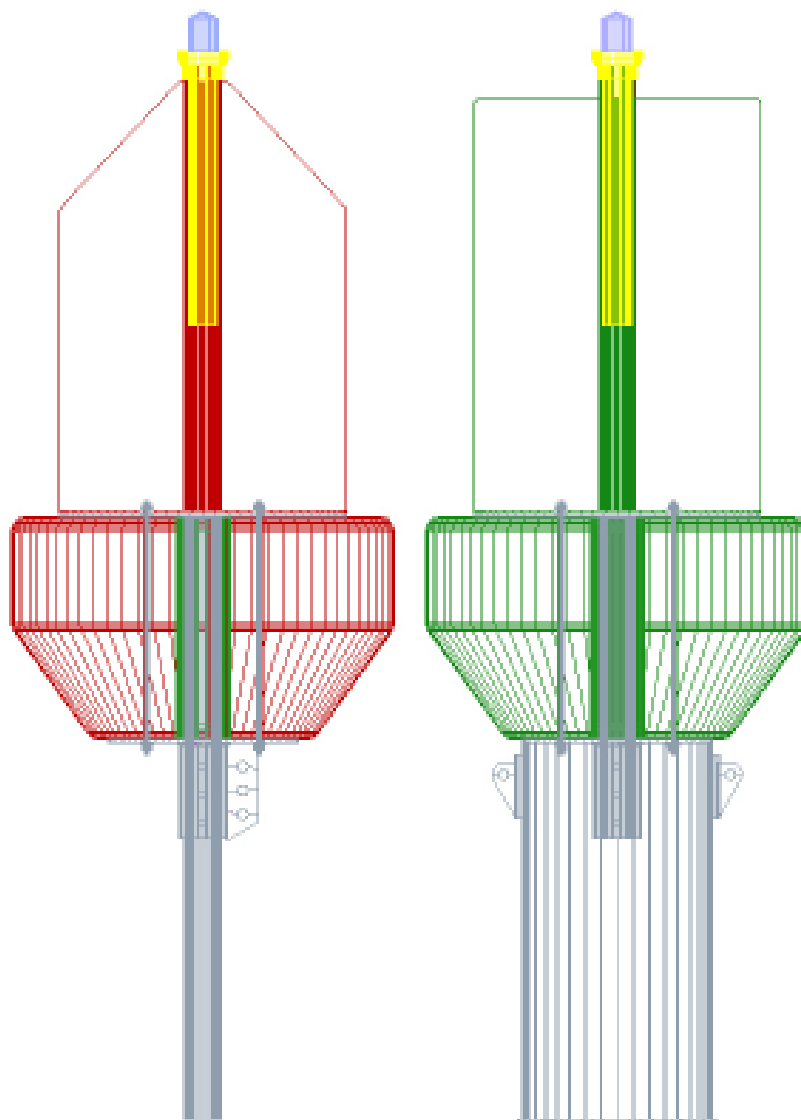
4 X 11 SERIES OFFSHORE LIGHTED MARKER BUOYS

4 X 11 series buoys are designed as lighted channel markers to designate navigatable channels or fairways in areas where rough water conditions may occur. This series is available in both can and nun configurations. Available colors include red, green, white, yellow, and black.

Both the can and nun buoys in this series are designed to accept a McDermott 6 or 8 battery BUNY model buoy light with an 85 millimeter lens. These lights are available in a wide array of flash rates, colors, and ranges.

The buoy hull is made of closed cell, crosslinked polyethylene foam covered with a Spectra® high strength fabric reinforced Seathane® polyurethane skin. The daymark (radar reflector) is made of 5086 aluminum.

Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.



4 X 11 series buoys are self righting and do not depend on the weight provided by their mooring to assume a proper attitude.

Model No.	Hull Dia./Hgt.	Cwt./Base Height	Overall Height*	Weight **	Net Buoyancy
4X11CA	48"/28"	48 "	139-5/8 "	730 lbs.	835 lbs.
4X11NA	48"/28"	48 "	139-5/8"	715 lbs.	850 lbs.
4X11CB	48"/28"	48-1/2"	140-1/8"	1,030 lbs.	575 lbs.
4X11NB	48"/28"	48-1/2"	140-1/8"	1,015 lbs.	590 lbs.

** Weight includes batteries, and light.

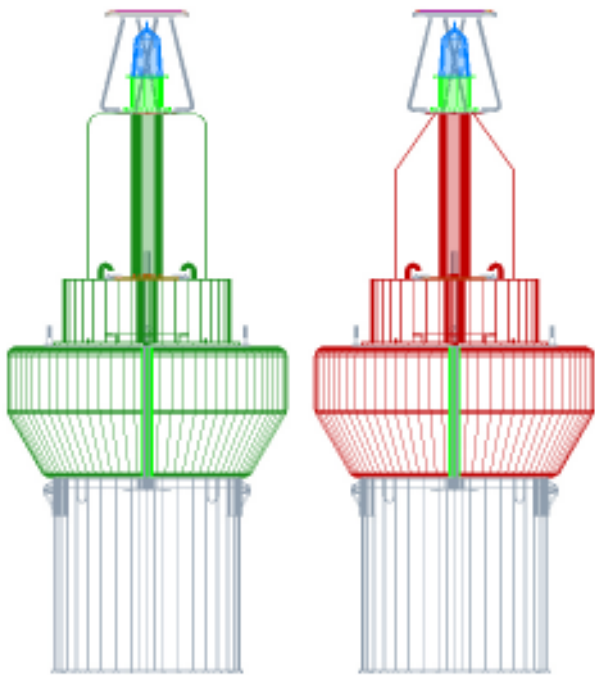
* Height Includes light.

4X11C has a can shaped daymark / **4X11N** has nun shaped daymark.

These buoys are not intended for use in areas where ice may crust in excess of 4".

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*

5X 12 LIGHTED MARKER BUOYS



5 X 12 lighted marker buoys are available with either a can or nun daymarks. They are intended to mark the boundaries of navigable fairways, passes or channels in areas where rough water conditions may occur. The skirted base utilizes the moment of inertia of trapped water to add to the stability of the buoy.

These units use a 120 to 155 mm Tidelands-Signal or Automatic Power light or a 85 mm McDermott PLAT light. Two 9-3/8" h. X 6-3/4" w. X 13" long gel-cell batteries can be housed in the aluminum compartments just below the radar reflector. Options include a wide array of solar panels.

Model No.	Hull Dia./Height	Cwt. Base Height	Overall Height*	Weight **	Net Buoyancy
5X12CB	60" / 28"	42"	143"	1,555 lbs.	1,395 lbs.
5x12NB	60" / 28"	42"	143"	1,550 lbs.	1,400 lbs.

5X12CB has a can shaped daymark / 5X12NB has a nun shaped daymark.

- * Includes optional solar panel.
- ** Includes the weight of two batteries, 155 mm light, & solar panel

These buoys are not intended for use in areas where ice may crust in excess of 4" thick.

The buoy hull is made of a closed cell, crosslinked polyethylene foam protected by a tough Spectra® high strength fabric reinforced Seathane® polyurethane skin. These buoys are self righting and do not depend on the weight provided by their mooring.

Steel components are hot dip galvanized with aluminum metalized carbon steel and 304 stainless steel optional. Aluminum components are 5086 aluminum.

The 5X12 series buoys shown herein are depicted with one of the optional solar panels.

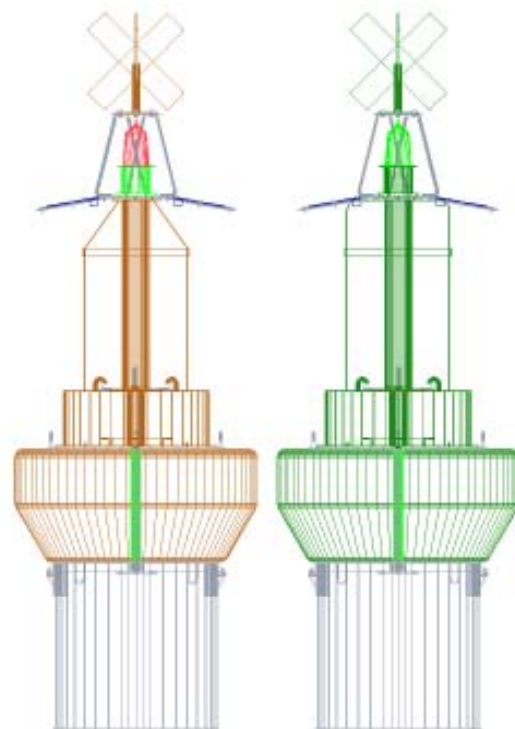
Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.



5X 13 LIGHTED FAIRWAY MARKER BUOYS

5 X 13 lighted marker buoys are available with either can or nun daymarks. They are intended to mark the boundaries of navigable borders, fairways, passes or channels in areas where rough water conditions may occur. The skirted base utilizes the moment of inertia of trapped water to add to the stability of the buoy.

These units use a 120 to 155 mm Tidelands-Signal or Automatic Power light or a 85 mm McDermott PLAT light. Two 9-3/8" h. X 6-3/4" w. X 13" long gel-cell batteries can be housed in the aluminum compartments just below the radar reflector. Options include a wide array of solar panels.



Model No.	Hull Dia./Height	Cwt. Base Height	Overall Height*	Weight **	Net Buoyancy
5X13CB	60" / 28"	42"	154"	1,615 lbs.	1,335 lbs.
5X13NB	60" / 28"	42"	154"	1,610 lbs.	1,340 lbs.

5X13CB has a can shaped daymark / **5X13NB** has a nun shaped daymark.

* Includes light, but not topmark (height with most topmarks is 178").

** Includes the weight of two batteries, 155 mm light, & two solar panels

These buoys are not intended for use in areas where ice may crust in excess of 4" thick.

The buoy hull is made of a closed cell, crosslinked polyethylene foam protected by a tough Spectra® high strength fabric reinforced Seathane® polyurethane skin. These buoys are self righting and do not depend on the weight provided by their mooring.

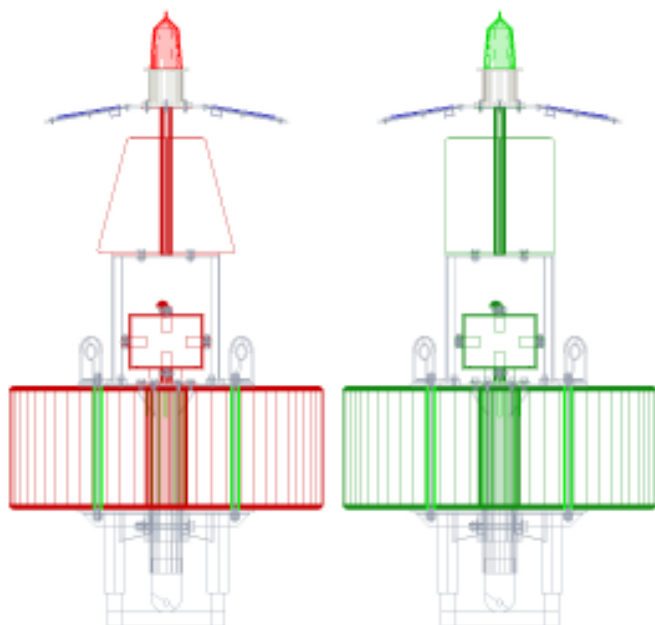
Steel components are hot dip galvanized with aluminum metalized carbon steel and 304 stainless steel optional. Aluminum components are 5086 aluminum.

The **5X13** series buoys shown herein are depicted with one of the optional solar panels.

Seathane® is a trademark of Urethane Technologies, Inc.

Spectra® is a trademark of Allied-Signal Corp.





5X9 LIGHTED CHANNEL MARKER BUOYS

5 X 9 lighted marker buoys are available with either can or nun daymarks. They are intended to mark the boundaries of navigable water ways, passes or channels in areas where moderate water conditions may occur.

These units use a 120 to 155 mm Tidelands-Signal or Automatic Power light or a 85 mm McDermott PLAT light. The interior dimensions of the battery compartment are 10" h. X 14" w. X 14" long. The daymark/radar reflector is 5086 aluminum. Options include a wide array of solar panels.

Model No.	Hull Dia./Height	Cwt. Base Height	Overall Height*	Weight **	Net** Buoyancy
5X9CB	64" / 28"	24"	125"	1,520 lbs.	1,520 lbs.
5X9NB	64" / 28"	24"	125"	1,525 lbs.	1,515 lbs.

5X9CB has a can shaped daymark / **5X9NB** has a nun shaped daymark.

* Includes light.

** Weight does not include batteries, light or solar panels

These buoys are not intended for use in areas where ice may crust in excess of 3" thick.

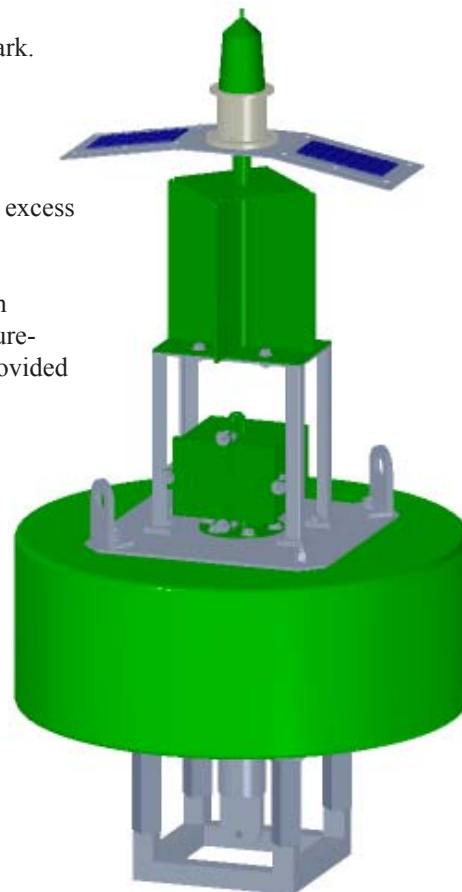
The buoy hull is made of a closed cell, crosslinked polyethylene foam protected by a tough Spectra® high strength fabric reinforced Seathane® polyurethane skin. These buoys are self righting and do not depend on the weight provided by their mooring.

Steel components are hot dip galvanized with aluminum metalized carbon steel and 304 stainless steel optional. Aluminum components are 5086 aluminum.

Seathane® is a trademark of Urethane Technologies, Inc.

Spectra® is a trademark of Allied-Signal Corp.

The **5X9** series buoys shown herein are depicted with one of many optional solar panel arrangements.



6 X 15 SERIES OFFSHORE MODULAR LIGHTED MARKER BUOYS

6 X 15 series buoys are designed as lighted marker buoys to designate navigatable fairways in offshore conditions or as sea buoys to mark the entrance to a pass. These buoys contain the high maintenance components in the removable module that can be changed quickly at sea and brought to a land base for repairs. Various counterweight bases are available to optimize their performance in your anticipated sea conditions. These buoys are normally available in white, yellow, red or green with other colors optional. It can carry an array of different bells, gongs, whistles, etc.

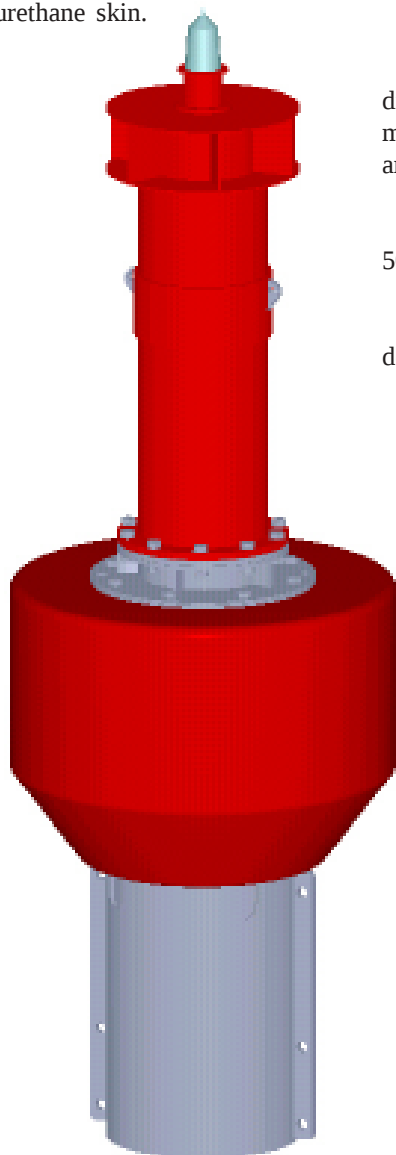
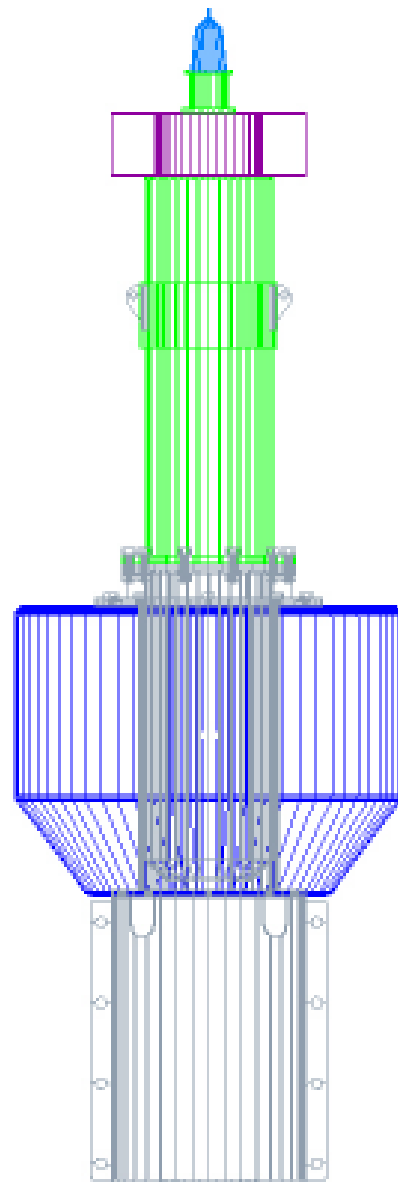
The **6X15** buoys are designed to accept a 120 or 155 mm Tidelands-Signal or Automatic Power buoy light. Mounting frames for various solar panel configurations are available. The lower portion of the removable module is a battery compartment which can be configured to hold up to 5 batteries measuring 9-3/8"H X 6-3/4"W X 13"L. The light is available in a number of different lens colors, flash rates and ranges.

The buoy hull is made of closed cell, crosslinked polyethylene foam covered with a Spectra® high strength fabric reinforced Seathane® polyurethane skin.

Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

The external radar reflector is made of 5086 aluminum.

These buoys are self righting and do not depend on weight provided by their mooring.



Model No.	Hull Dia./Hgt.	Cwt. Base Height	Overall Height*	Weight	Net Buoyancy
6X15A	72"/54"	54"	219"	4,300 lbs.	3,300 lbs.
6X15B	72"/54"	54"	219"	4,200 lbs.	3,400 lbs.
6X12H	72"/54"	54"	219"	4,150 lbs.	3,450 lbs.

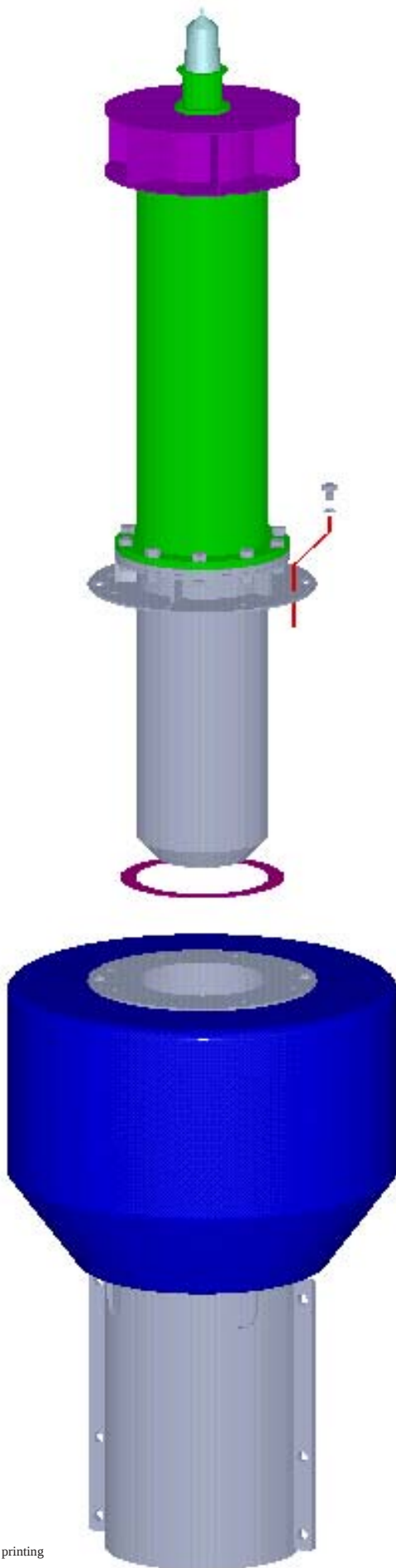
Weight above includes two (2) Delco 2000 batteries.

* Includes light.

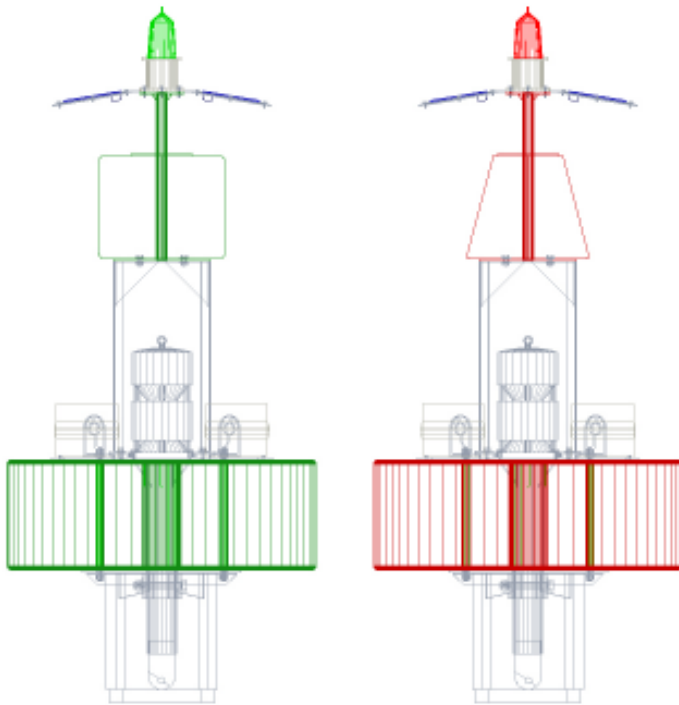
These buoys are not intended for use in areas where ice may crust in excess of 4".

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*

***6X15 OFFSHORE MODULAR
LIGHTED MARKER BUOY***



6X12, 6X14 & 6X16 LIGHTED FAIRWAY MARKER BUOYS



6 X 12, 6x14 & 6X16 lighted marker buoys are available with either can or nun daymarks. They are intended to mark the boundaries of navigable water ways, passes, fairways or channels. The 6X12 version is designed for use in areas where only a moderate buoyancy is required. The 6X14 and 6X16 versions are designed for use when a higher buoyancy is needed.

These units use a 120 to 155 mm Tidelands-Signal, ESSI or Automatic Power light. The daymark/radar reflector is 5086 aluminum. Options include a wide array of solar panels.

The buoys depicted here are shown with an ESSI SA-850/1A fog horn and dual ESSI battery cases. The buoy hull is made of a closed cell, crosslinked polyethylene foam protected by a tough Spectra® high strength fabric reinforced Seathane® polyurethane skin. These buoys are self righting and do not depend on the weight provided by their mooring.

Steel components are hot dip galvanized with aluminum metalized carbon steel and 304 stainless steel optional. Aluminum components are 5086 aluminum.

Model No.	Hull Dia./Height	Cwt. Base Height	Overall Height*	Weight **	Net** Buoyancy
6X12-CB	70" / 25"	30"	150"	2,120 lbs.	1,425 lbs.
6X12-NB	70" / 25"	30"	150"	2,115 lbs.	1,430 lbs.
6X14-CB	70" / 36"	36"	167"	2,320 lbs.	2,735 lbs.
6X14-NB	70" / 36"	36"	167"	2,315 lbs.	2,740 lbs.
6X16-CB	72" / 36"	48"	193"	2,600 lbs.	4,145 lbs.
6X16-NB	72" / 36"	48"	193"	2,585 lbs.	4,160 lbs.

6X12-CB, 6X14-CB & 6X16-CB have a can shaped daymark
6X12-NB, 6X14-NB & 6X16-NB have a nun shaped daymark.

* Includes a Tidelands-Signal ML-155 light.

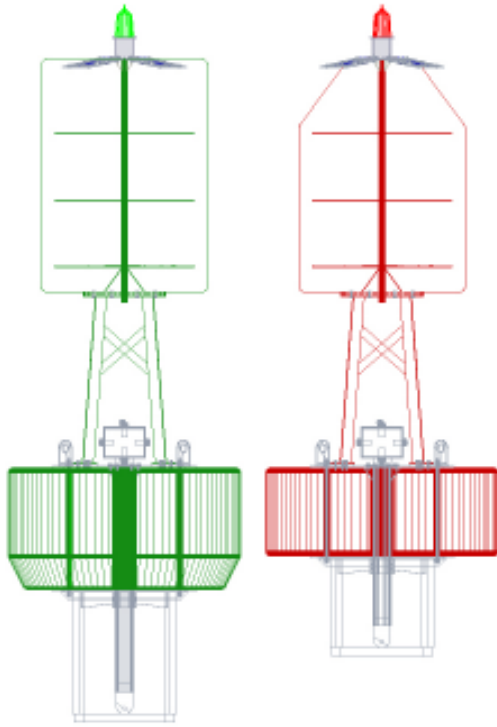
** Weight includes 275 lbs. of payload
 (batteries, light, solar panels, fog horn, etc.)

The net buoyancy listed is in sea water of 63.87 lbs./ cu. ft.

These buoys are not intended for use in areas where ice may crust in excess of 3" thick.



Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.



7X20 & 7X22 LIGHTED FAIRWAY MARKER BUOYS

7 X 20 & 7X22 lighted marker buoys are available with either can or nun daymarks. They are intended to mark the boundaries of navigable water ways, passes, fairways or channels. The 7X20 version is designed for use in areas where moderate water conditions may occur. The 7X22 version is designed for use in the open sea or unprotected waters.

These units use a 120 to 155 mm Tidelands-Signal, ESSI or Automatic Power light. The interior dimensions of the battery compartment are 10" h. X 14" w. X 14" long. The daymark/radar reflector is 5086 aluminum. Options include a wide array of solar panels.

Model No.	Hull Dia./Height	Cwt. Base Height	Overall Height*	Weight **	Net** Buoyancy
7X20-CB	84" / 32"	36"	235"	3,510 lbs.	3,180 lbs.
7X20-NB	84" / 32"	36"	235"	3,495 lbs.	3,195 lbs.
7X22-CB	84" / 44"	48"	259"	3,800 lbs.	5,015 lbs.
7X22-NB	84" / 44"	48"	259"	3,785 lbs.	5,030 lbs.

7X20-CB & 7X22-CB have a can shaped daymark
7X20-NB & 7X22-NB have a nun shaped daymark.

* Includes a Tideland-Signal ML-155 light.

** Weight include two batteries, ML-155 light or solar panels
 The net buoyancy listed is in sea water of 63.87 lbs./ cu. ft.

These buoys are not intended for use in areas where ice may crust in excess of 3" thick.

The buoy hull is made of a closed cell, crosslinked polyethylene foam protected by a tough Spectra® high strength fabric reinforced Seathane® polyurethane skin. These buoys are self righting and do not depend on the weight provided by their mooring.

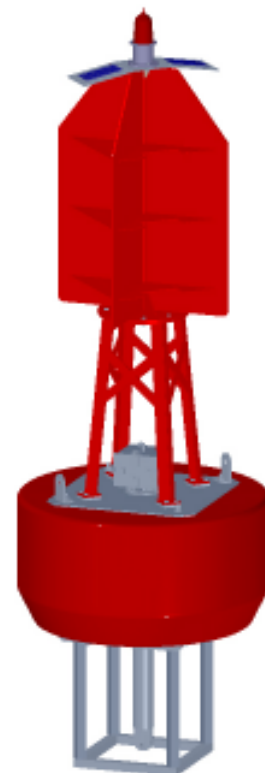
Steel components are hot dip galvanized with aluminum metalized carbon steel and 304 stainless steel optional. Aluminum components are 5086 aluminum.

The **7X20 & 7X22** series buoys shown herein are depicted with one of many optional light and solar panel arrangements.

Seathane® is a trademark of Urethane Technologies, Inc.

Spectra® is a trademark of Allied-Signal Corp.

6/28/2002 printing

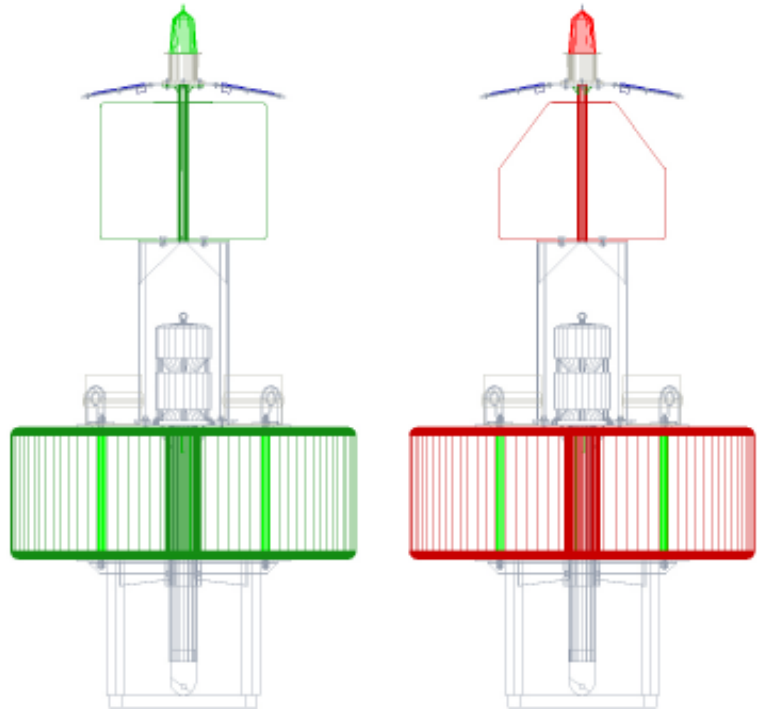


7X14 & 7X16 LIGHTED FAIRWAY MARKER BUOYS

7 X 14 & 7X16 lighted marker buoys are available with either can or nun daymarks. They are intended to mark the boundaries of navigable water ways, passes, fairways or channels. The 7X14 version is designed for use in areas where moderate water conditions may occur. The 7X16 version is designed for use in the open sea or unprotected waters.

These units use a 120 to 155 mm Tidelands-Signal, ESSI or Automatic Power light. The daymark/radar reflector is 5086 aluminum. Options include a wide array of solar panels.

The buoys depicted here are shown with an ESSI SA-850/1A fog horn and dual ESSI battery cases



Model No.	Hull Dia./Height	Cwt. Base Height	Overall Height*	Weight **	Net** Buoyancy
7X14-CB	84" / 32"	36"	171"	2,960 lbs.	3,715 lbs.
7X14-NB	84" / 32"	36"	171"	2,975 lbs.	3,700 lbs.
7X16-CB	84" / 44"	48"	195"	3,265 lbs.	5,535 lbs.
7X16-NB	84" / 44"	48"	195"	3,250 lbs.	5,550 lbs.



7X14-CB & 7X16-CB have a can shaped daymark

7X14-NB & 7X16-NB have a nun shaped daymark.

* Includes a Tideland-Signal ML-155 light.

** Weight includes 275 lbs. of payload (batteries, light, solar panels, fog horn, etc.)

The net buoyancy listed is in sea water of 63.87 lbs./ cu. ft.

These buoys are not intended for use in areas where ice may crust in excess of 3" thick.

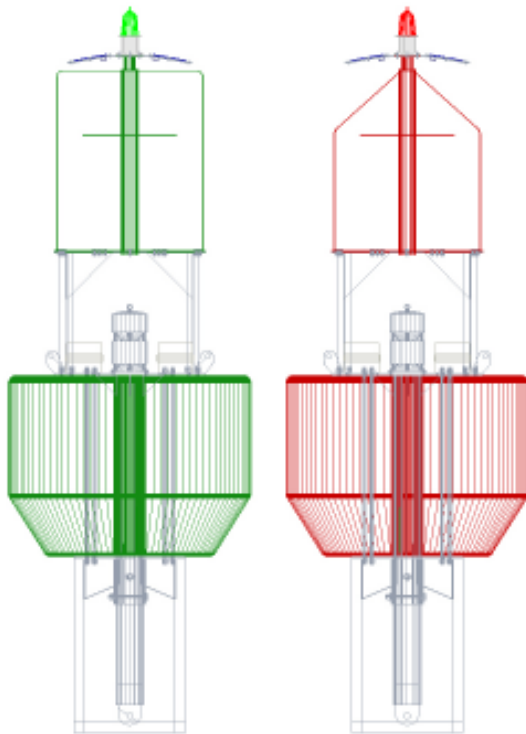
The buoy hull is made of a closed cell, crosslinked polyethylene foam protected by a tough Spectra® high strength fabric reinforced Seathane® polyurethane skin. These buoys are self righting and do not depend on the weight provided by their mooring.

Steel components are hot dip galvanized with aluminum metalized carbon steel and 304 stainless steel optional. Aluminum components are 5086 aluminum.

The **7X14 & 7X16** series buoys shown herein are depicted with one of many optional light and solar panel arrangements.

Seathane® is a trademark of Urethane Technologies, Inc.

Spectra® is a trademark of Allied-Signal Corp.



8X23 LIGHTED CHANNEL MARKER BUOYS

8 X23 lighted marker buoys are available with either can or nun daymarks. They are intended to mark the boundaries of navigable fairways or channels in unprotected water conditions may occur.

These units use a 120 to 155 mm Tidelands-Signal, ESSI or Automatic Power light. The daymark/radar reflector is 5086 aluminum. Options include a wide array of solar panels.

The buoys depicted here are shown with an ESSI SA-850/1A fog horn and dual ESSI battery cases. The buoy hull is made of a closed cell, crosslinked polyethylene foam protected by a tough Spectra® high strength fabric reinforced Seathane® polyurethane skin. These buoys are self righting and do not depend on the weight provided by their mooring.

Steel components are hot dip galvanized with aluminum metalized carbon steel and 304 stainless steel optional. Aluminum components are 5086 aluminum.

Model No.	Hull Dia./Height	Cwt. Base Height	Overall Height*	Weight **	Net** Buoyancy
8X23C	96" / 72"	70"	288"	6,740 lbs.	10,875 lbs.
8X23N	96" / 72"	70"	288"	6,675 lbs.	10,940 lbs.

8X23CB has a can shaped daymark / **8X23NB** has a nun shaped daymark.

* Includes light.

** Weight includes 275 lbs. of payload (batteries, light, solar panels, fog horn, etc.)

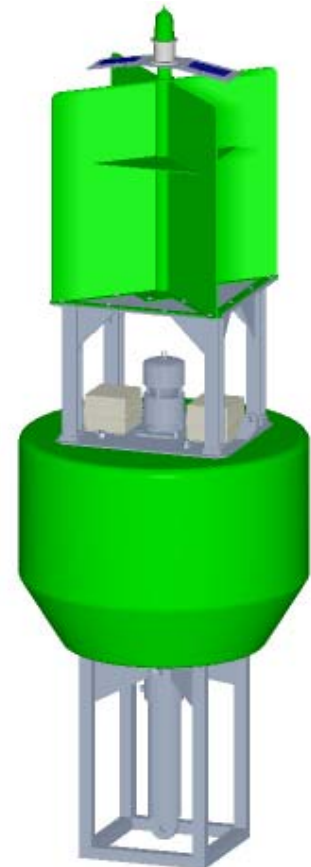
These buoys are not intended for use in areas where ice may crust in excess of 4" thick.

The buoy hull is made of a closed cell, crosslinked polyethylene foam protected by a tough Spectra® high strength fabric reinforced Seathane® polyurethane skin. These buoys are self righting and do not depend on the weight provided by their mooring.

Steel components are hot dip galvanized with aluminum metalized carbon steel and 304 stainless steel optional. Aluminum components are 5086 aluminum.

The **8X23** series buoys shown herein are depicted with one of many optional solar panel arrangements.

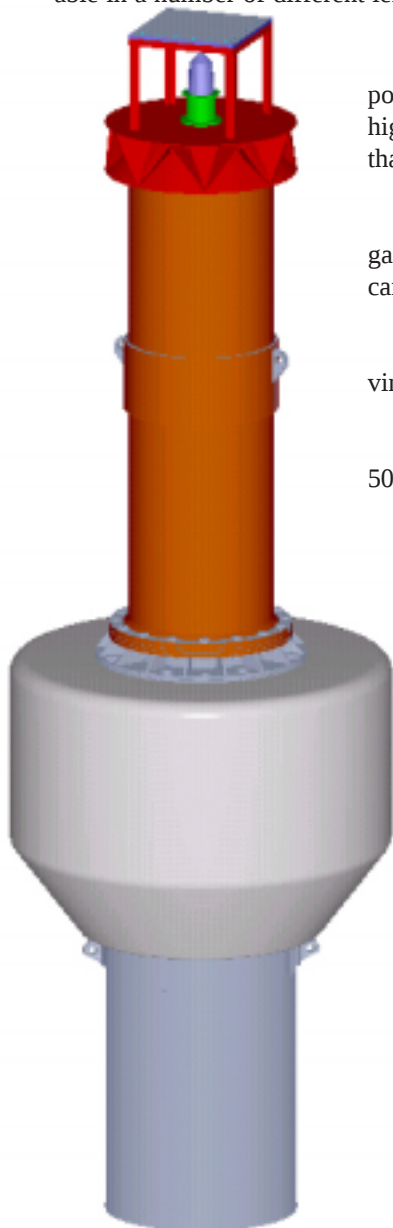
*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*



8 X 26 SERIES OFFSHORE MODULAR LIGHTED MARKER BUOYS

8 X 26 series buoys are designed as lighted marker buoys to designate navigatable fairways in offshore conditions or as sea buoys to mark the entrance to a pass. These buoys contain the high maintenance components in the removable module that can be changed quickly at sea and brought to a land base for repairs. Various counter-weight bases are available to optimize their performance in your anticipated sea conditions. These buoys are normally available in white, yellow, red or green with other colors optional. They will carry a array of different bells, gongs, whistles, etc.

The **8X26** buoys are designed to accept a 155 mm Tidelands-Signal or Automatic Power buoy light and various solar panel configurations. The lower portion of the removable module is a battery compartment which can be configured to hold up to 30 batteries measuring 9-3/8"H X 6-3/4"W X 13"L. The light is available in a number of different lens colors, flash rates and ranges.



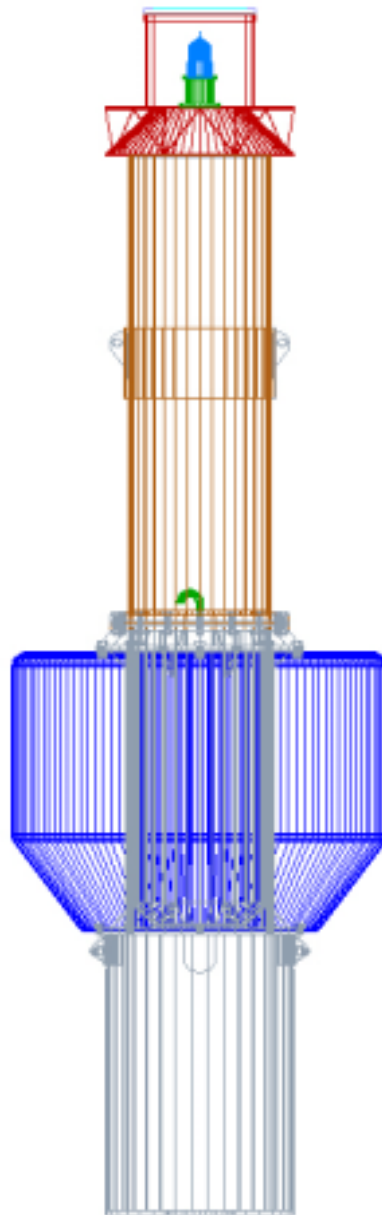
The buoy hull is made of closed cell, crosslinked polyethylene foam covered with a Spectra® 900 high strength fabric reinforced Seathane® polyurethane skin.

Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional.

The upper cylindrical section is a Kevlar® / vinylester resin/Divinycell® composite tube.

The external conical radar reflector is made of 5086 aluminum.

These buoys are self righting and do not depend on weight provided by their mooring.



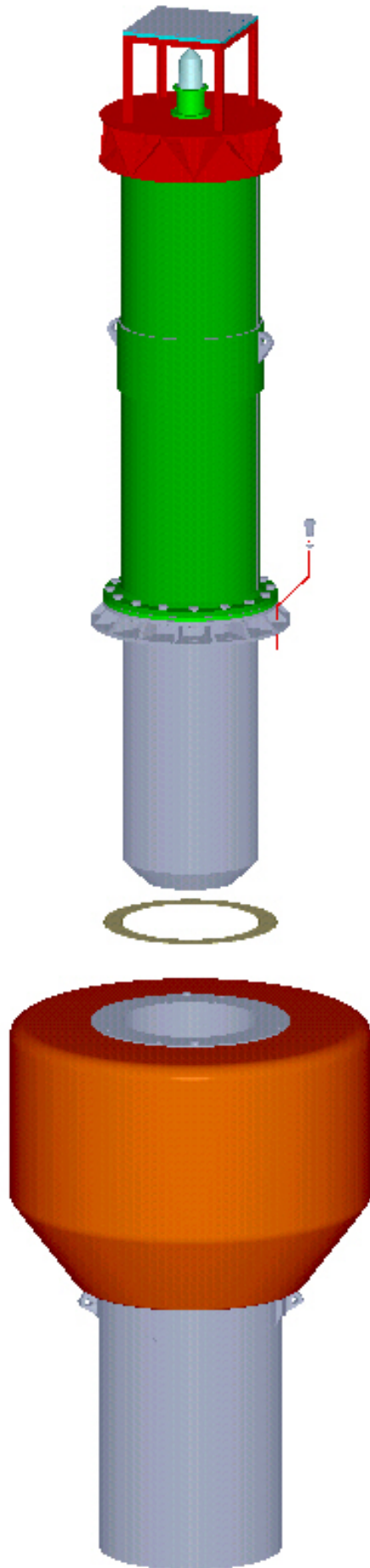
Model No.	Hull Dia./Hgt.	Cwt.. Base Height	Overall Height	Weight	Net Buoyancy
8X26A	96"/72"	73"	311"	8,100 lbs.	9,300 lbs.
8X26B	96"/72"	72"	310"	7,925 lbs.	9,475 lbs.
8X26H	96"/72"	72"	310"	7,640 lbs.	9,760 lbs.

Weight above includes two (2) Delco 2000 batteries.

The **8X26** Series buoys shown herein are depicted with one of the optional solar panels.

These buoys are not intended for use in areas where ice may crust in excess of 4".

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.
Kevlar® is a trademark of E. I. DuPont.
Divinycell® is a trademark of Diab-Barracuda, Inc.*

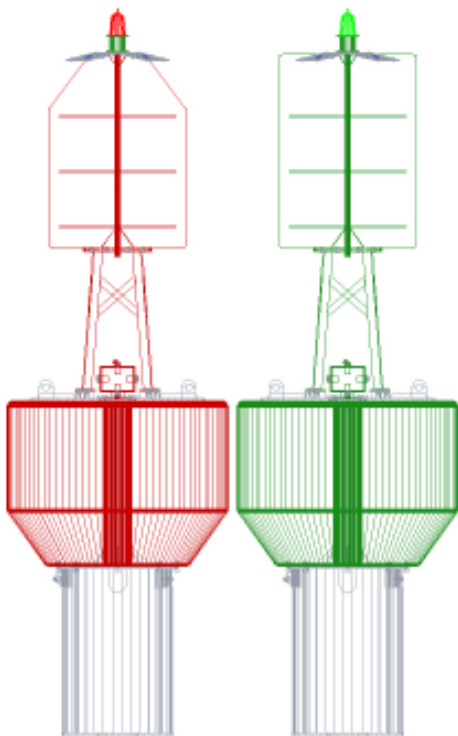


***8 X 26 OFFSHORE MODULAR
LIGHTED MARKER BUOY***

8 X 26P LIGHTED FAIRWAY MARKER BUOYS

8 X 26P lighted marker buoys are available with either can or nun daymarks. They are intended to mark the boundaries of navigable water ways, passes or channels in areas where moderate water conditions may occur.

These units use a 120 to 155 mm Tidelands-Signal or Automatic Power light or a 85 mm McDermott PLAT light. The interior dimensions of the battery compartment are 10" h. X 14" w. X 14" long . The daymark/radar reflector is 5086 aluminum. Options include a wide array of solar panels.



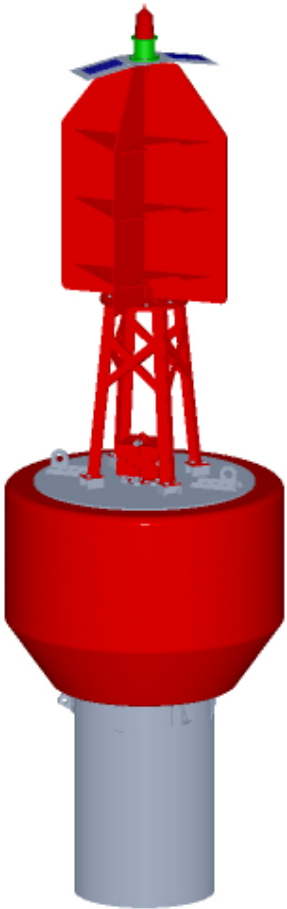
Model No.	Hull Dia./Height	Cwt. Base Height	Overall Height*	Weight **	Net** Buoyancy
8X26P-CAN	96" / 72"	73"	316"	6,580 lbs.	10,715 lbs.
8X26P-NUN	96" / 72"	73"	316"	6,545 lbs.	10,750 lbs.

8X26P-CAN has a can shaped daymark / 8X26PNUN has a nun shaped daymark.

* Includes light.

** Weight does not include batteries, light or solar panels

These buoys are not intended for use in areas where ice may crust in excess of 4" thick.



The buoy hull is made of a closed cell, crosslinked polyethylene foam protected by a tough Spectra® high strength fabric reinforced Seathane® polyurethane skin. These buoys are self righting and do not depend on the weight provided by their mooring.

Steel components are hot dip galvanized with aluminum metalized carbon steel and 304 stainless steel optional. Aluminum components are 5086 aluminum.

The 8X26P series buoys shown herein are depicted with one of many optional solar panel arrangements.

Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.

8 X 24 SERIES OFFSHORE LIGHTED MARKER BUOYS

8 X 24 series buoys are designed as lighted marker buoys to designate navigatable fairways in offshore conditions or to designate anchorage and other special areas. These buoys contain the high maintenance components in the removable module that can be changed quickly at sea and brought to a land base for repairs. Various counterweight bases are available to optimize their performance in your anticipated sea conditions. These buoys are normally available in white, yellow, red or green with other colors optional. They will carry a array of different bells, gongs, whistles, etc.

The 8X24 buoys are designed to accept a 155 mm Tidelands-Signal or Automatic Power buoy light and various solar panel configurations. The lower portion of the removable module is a battery compartment which can be configured to hold up to 30 batteries measuring 9-3/8"H X 6-3/4"W X 13"L. The light is available in a number of different lens colors, flash rates and ranges.

All the various I.A.L.A. topmarks are available for these buoys.

The buoy hull is made of closed cell, crosslinked polyethylene foam covered with a Spectra® 900 high strength fabric reinforced Seathane® polyurethane skin.

Steel components of these buoys are hot dipped galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional. The upper and radar reflector is made of 5086 aluminum.

These buoys are self righting and do not depend on weight provided by their mooring.

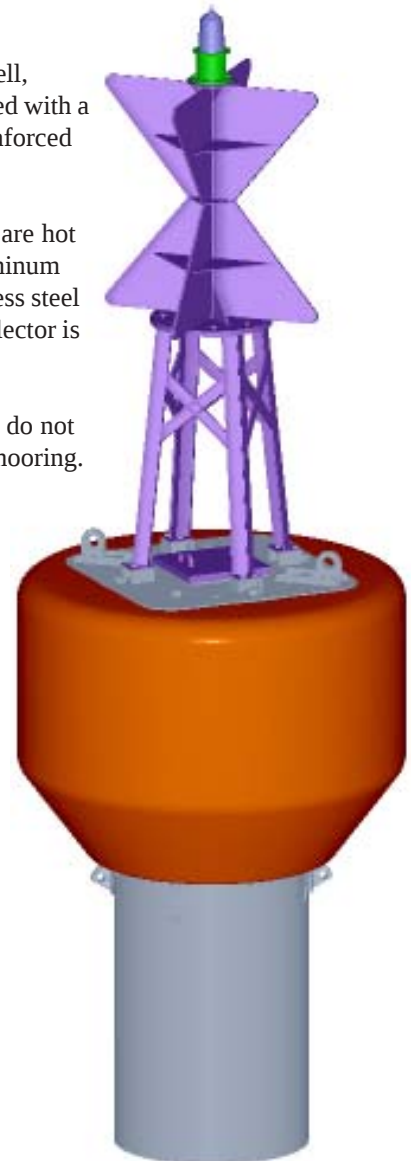
Model No.	Hull Dia./Hgt.	Cwt.. Base Height	Overall Height	Weight*	Net Buoyancy
8X24	96"/72"	73"	291"	8,100 lbs.	9,300 lbs.

* Weight above includes two (2) Delco 2000 batteries.

The 8X24 Series buoys are available with a wide array of solar panel options.

These buoys are not intended for use in areas where ice may crust in excess of 4".

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.
Kevlar® is a trademark of E. I. DuPont.
Divinycell® is a trademark of Diab-Barracuda, Inc.*



TN-223 & TN-330 TENSION BUOYS

These **TN-223** and **TN-330** buoys are designed to maintain a constant tension on their moorings. The floatation module of the buoy remains 4 to 6 feet below the water's surface and exerts a constant upward force on the anchoring system. This results in the buoy remaining vertical with very little pitch or roll in all but the roughest of sea conditions.

TN series buoys are available with various daymark (radar reflector), light, solar panel, and battery configurations. A wide array of color combinations are available.

The floatation module is made of 4 and 6 lb./cubic foot closed cell, crosslinked polyethylene foam protected by a Spectra® high strength fabric reinforced Seathane® polyurethane skin.

Steel components of these buoys are hot dip galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional. The daymark (radar reflector) is made of 5086 aluminum.

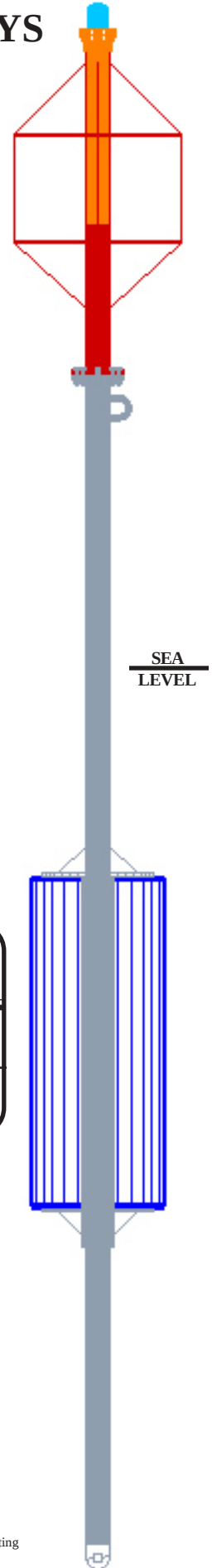
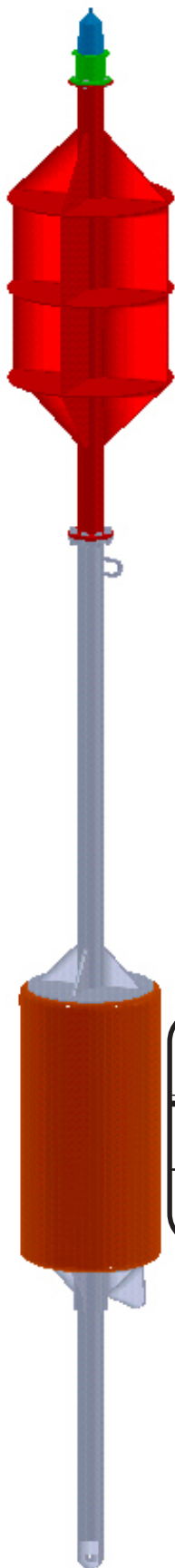
Model No.	Hull Diameter	Overall Height *	Weight **	Net Buoyancy
TN-223	24"	23'5"	630 lbs.	410 lbs.
TN-330	36"	34'7"	1,960 lbs.	760 lbs.

* Includes light

** Includes light and battery

These buoys will handle ice crust up to 18" thick.

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*



TN-440 & TN-550 TENSION BUOYS

These **TN-440** and **TN-550** buoys are designed to maintain a constant tension on their moorings. The floatation module of the buoy remains 5 to 8 feet below the water's surface and exerts a constant upward force on the anchoring system. This results in the buoy remaining vertical with no pitch or roll in all but the roughest of sea conditions.

TN series buoys are available with various daymark (radar reflector), light, solar panel, and battery configurations. Various color combinations are available. These models are available with or without a rudder.

The floatation module is made of 6 and 8 lb./cubic foot closed cell, crosslinked polyethylene foam protected by a Spectra® high strength fabric reinforced Seathane® polyurethane skin.

Steel components of these buoys are hot dip galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional. The daymark (radar reflector) is made of 5086 aluminum.

SEA
LEVEL

Model No.	Hull Diameter	Overall Height *	Weight **	Net Buoyancy
TN-440	48"	41'5"	3,710 lbs.	1,485 lbs.
TN-550	60"	52'8"	5,465 lbs.	4,400 lbs.
TN-550CYL	60"	53'0"	5,580 lbs.	4,230 lbs.

* Includes light

** Includes light and battery

These buoys will handle ice crust up to 30" thick.

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*

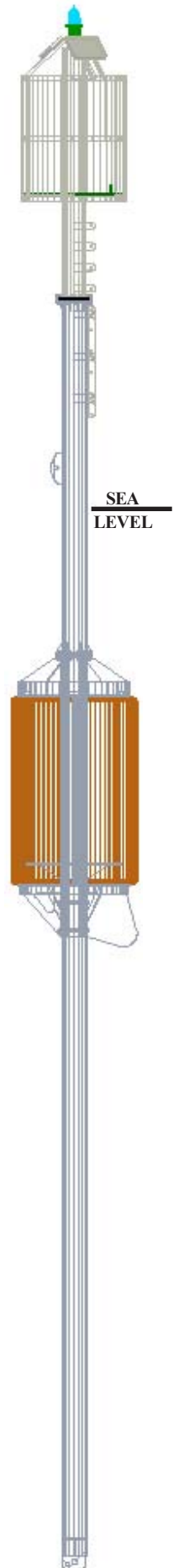
TN-660 & TN-675 TENSION BUOYS

These **TN-660** and **TN-675** buoys are designed to maintain a constant tension on their moorings. The floatation module of the buoy remains 4 to 11 feet below the water's surface and exerts a constant upward force on the anchoring system. This results in the buoy remaining vertical with very little pitch or roll in all but the roughest of sea conditions.

TN series buoys are available with various daymark (radar reflector), light, solar panel, and battery configurations. A wide array of color combinations are available. They are available with or without a rudder.

The floatation module is made of 4, 6, 8 and 11 lb./cubic foot closed cell, crosslinked polyethylene foam protected by a Spectra® high strength fabric reinforced Seathane® polyurethane skin.

Steel components of these buoys are hot dip galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional. The daymark (radar reflector) is made of 5086 aluminum.



Model No.	Hull Diameter	Overall Height *	Weight **	Net Buoyancy
TN-660	72"	59'9"	9,090 lbs.	3,830 lbs.
TN-675	72"	74'9"	10,490 lbs.	5,955 lbs.

* Includes light

** Includes light and batteries

These buoys will handle ice crust up to 40" thick.

*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*

TN-860 & TN-875 TENSION BUOYS

These **TN-860** and **TN-875** buoys are designed to maintain a constant tension on their moorings. The floatation module of the buoy remains 6 to 12 feet below the water's surface and exerts a constant upward force on the anchoring system. This results in the buoy remaining vertical with no pitch or roll in all but the roughest of sea conditions.

TN series buoys are available with various daymark (radar reflector), light, solar panel, and battery configurations. Various color combinations are available. They are available with or without a rudder.

The floatation module is made of 4, 6, 8 and 11 lb./cubic foot closed cell, crosslinked polyethylene foam protected by a Spectra® high strength fabric reinforced Seathane® polyurethane skin.

Steel components of these buoys are hot dip galvanized carbon steel. Aluminum metalized carbon steel and 304 stainless steel are optional. The daymark (radar reflector) is made of 5086 aluminum.

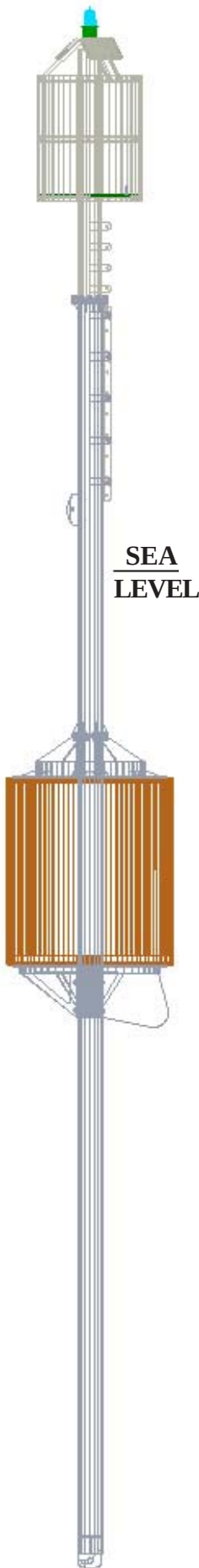
Model No.	Hull Diameter	Overall Height *	Weight **	Net Buoyancy
TN-860	96"	59'10"	11,995 lbs.	12,940 lbs.
TN-875	96"	74'10"	13,875 lbs.	14785 lbs.

* Includes light

** Includes light and batteries

These buoys will handle ice crust up to 55" thick.

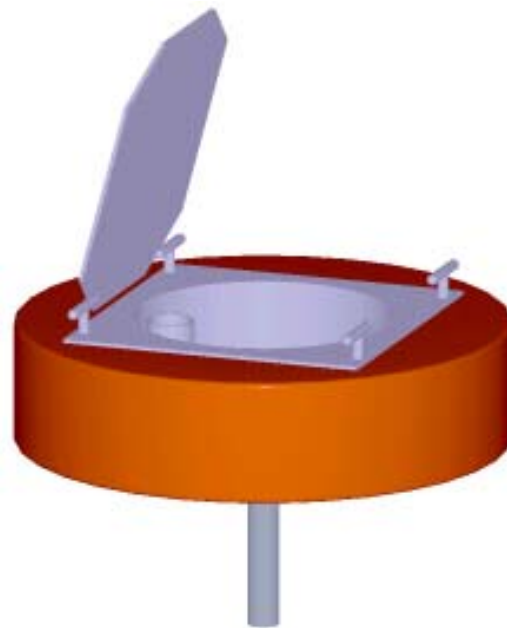
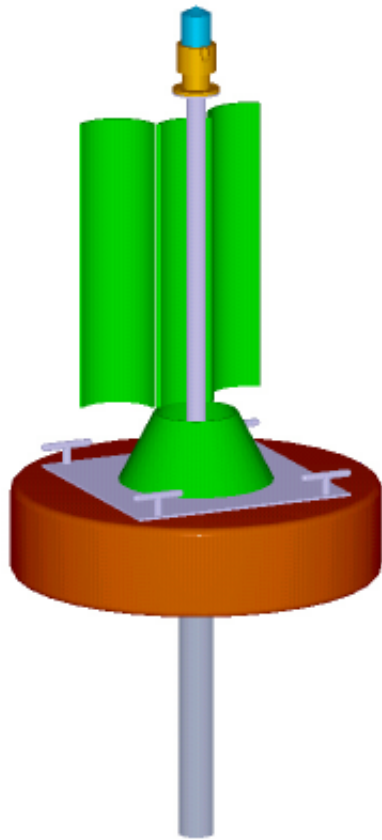
*Seathane® is a trademark of Urethane Technologies, Inc.
Spectra® is a trademark of Allied-Signal Corp.*



INSTRUMENT BUOYS

Urethane Technologies designs and manufactures buoys that carry various instrument packages on a custom order basis. These buoys are made of closed cell, cross-linked polyethylene foam protected by a Spectra® 900 high strength fabric reinforced Seathane® polyurethane skin.

Metallic components consisting of hot dip galvanized carbon steel, aluminum, 304 or 316L stainless steel are available.



When lighting is required; a wide variety of McDermott, Tidelands-Signal or Automatic Power lights can be incorporated into the buoy design. Various battery and solar panel combinations can be accommodated.

We have designed and manufactured both offshore and protected water instrument buoys to carry current meters, water quality sampling units, wave measurement devices, etc. for a number of companies and research organizations.



SUB-SEA RISER BUOYS



In addition to our collision survivable buoys, We design and manufacture sub-sea riser buoys in various metallic constructions.

These buoys are used for sub-surface buoyancy to support instrument packages, sampling devices, hold tension on mooring lines, help surface buoys support heavy moorings, aid in shock absorbsion on moorings, etc.

18", 30" and 37" diameter sizes for operating depths of up to 1200 feet are standard units, but we have furnished risers as large as 18 foot diameter. We have made other units for ure at a 8,000 foot depth.

These buoys are normally made in a spherical shape to obtain the maximum crust resistance, but other shapes are available.

The exterior surfaces can be protected from corrosion by our Seathane[®] polyurethane, a thick rubber covering or a protective coating system of your selection.

Zinc anodes provide galvanic corrosion protection to supplement the coating.



PHC SERIES HORIZONTAL FLOATS

PHC series floats are collision survivable floats for marking areas or floating lines in protected waters.

- The **PHC** series is made of closed cell, crosslinked polyethylene foam covered with a tough Seathane® polyurethane skin.

- Steel components of these floats are hot dip galvanized carbon steel. Stainless steel metal components are optional.

Floats in this series are not internally ballasted. Due to their cylindrical shape they do not depend on the mooring weight to maintain a proper attitude. However, the weight supported by each end of the float should be relatively equal for the unit to float horizontal.



Model No.	Diameter	Length	Center Tube Dia.	Weight	Net Buoyancy
PHC-18	18"	30"	1-1/2"	26 lbs.	240 lbs.
PHC-24	24"	40"	2"	63 lbs.	580 lbs.
PHC-30	30"	50"	3"	133 lbs.	1,115 lbs.

These floats are not intended for use in areas where ice may crust in excess of 3".

Do not rig these floats in a manner that will cause them to take a vertical attitude instead of a horizontal one.

Seathane® is a trademark of Urethane Technologies, Inc.



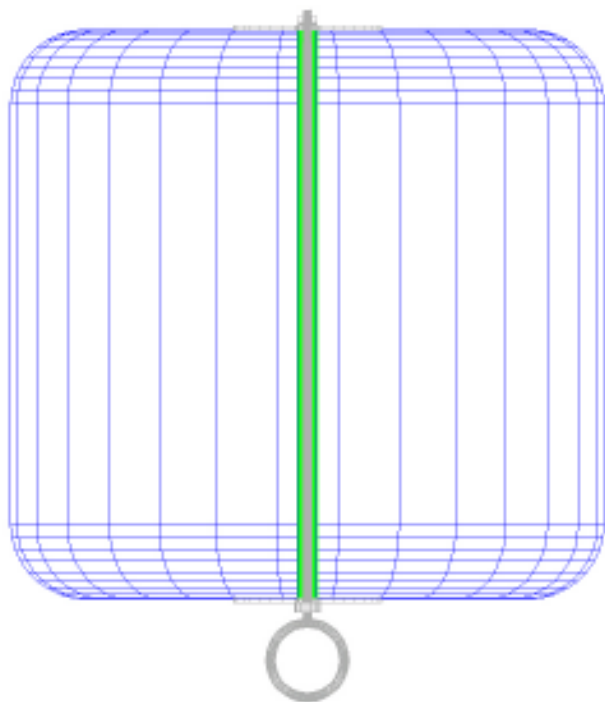
PVC SERIES VERTICAL FLOATS

PVC series floats are collision survivable floats for marking areas or floating lines in protected waters.

- The **PVC** series is made of closed cell, crosslinked polyethylene foam covered with a tough Seathane® polyurethane skin.

- Steel components of these floats are hot dip galvanized carbon steel. Stainless steel metal components is an option.

Floats in this series are not internally ballasted. They depend on the weight of the mooring to maintain a proper attitude. A underwater weight of 10% to 20% of the float's net buoyancy should be provided by the mooring.



Model No.	Diameter	Height	Rod Dia.	Weight	Net Buoyancy
PVC-18	18"	16"	5/16"	14 lbs.	133 lbs.
PVC-24	24"	23"	3/8"	25 lbs.	340 lbs.
PVC-30	30"	28"	1/2"	52 lbs.	635 lbs.

These floats are not intended for use in areas where ice may crust in excess of 3".



Seathane® is a trademark of Urethane Technologies, Inc.

DOCK FENDERING

Urethane Technologies manufactures **dock fendering** using a casting version of our Seathane® polyurethane. Most **dock fendering** can be made of either solid polyurethane or polyethylene foam with a polyurethane shell cast around it.

Features:

- Non Marring
- Excellent color retention
- Tough yet energy absorbent
- Not effected by UV light or ozone
- Resistant to fuels
- Retains physical properties down to -80° F.

Most of our **dock fendering** is custom made. A few shapes that are more common are depicted herein. When necessary, the fendering can even be cast in place.



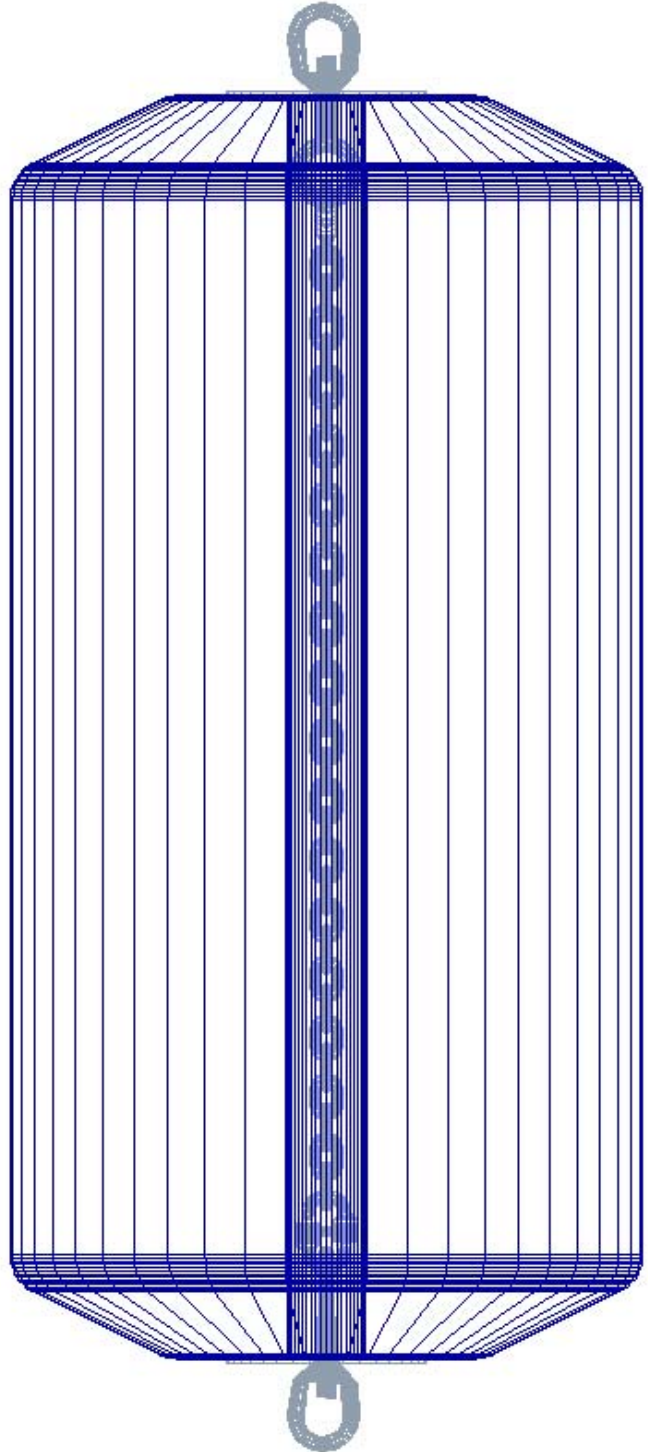
Seathane® is a trademark of Urethane Technologies, Inc.

SHIP FENDERING

Urethane Technologies' ship fendering is normally made of closed cell, crosslinked polyethylene foam covered with a tough fiber reinforced Seathane® polyurethane skin. For light duty services we can manufacture fendering using a Surlyn® foam with a dense Surlyn® skin. A wide variety of sizes, fittings, & shapes can be made.

Features:

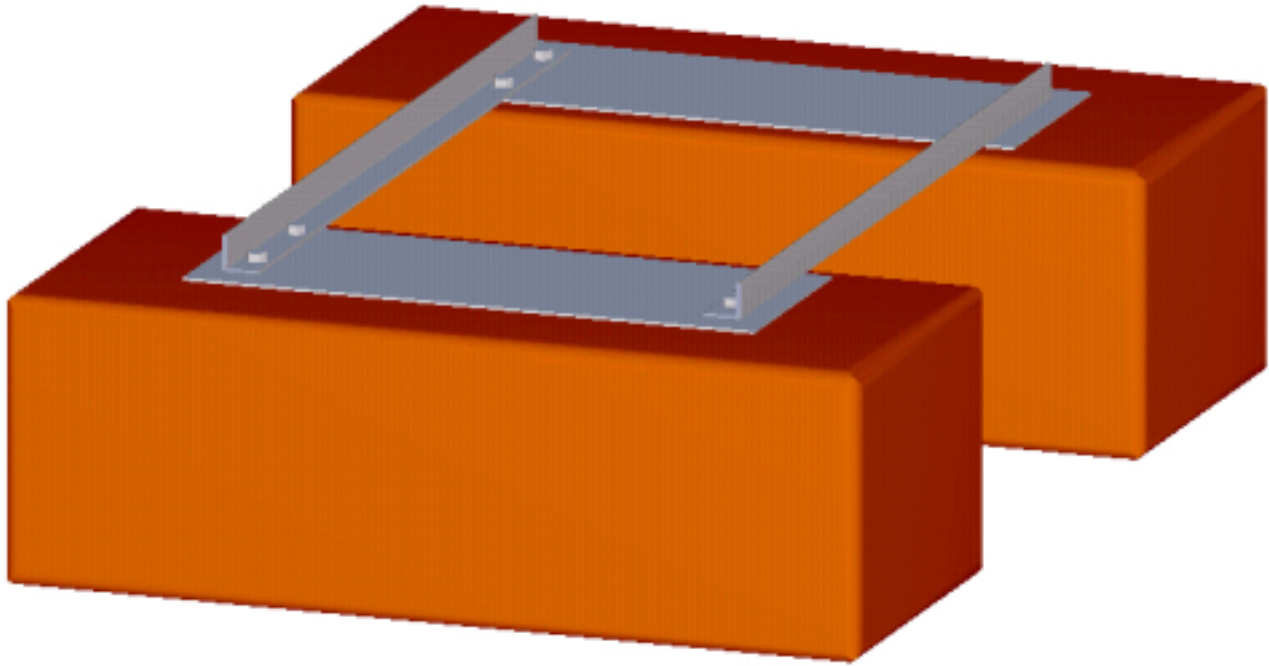
- Non Marring
- Excellent color retention
- Tough yet energy absorbent
- Not effected by UV light or ozone
- Resistant to fuels
- Retains physical properties down to -80° F



*Seathane® is a trademark of Urethane Technologies, Inc.
Surlyn® is a trademark of E. I. DuPont*

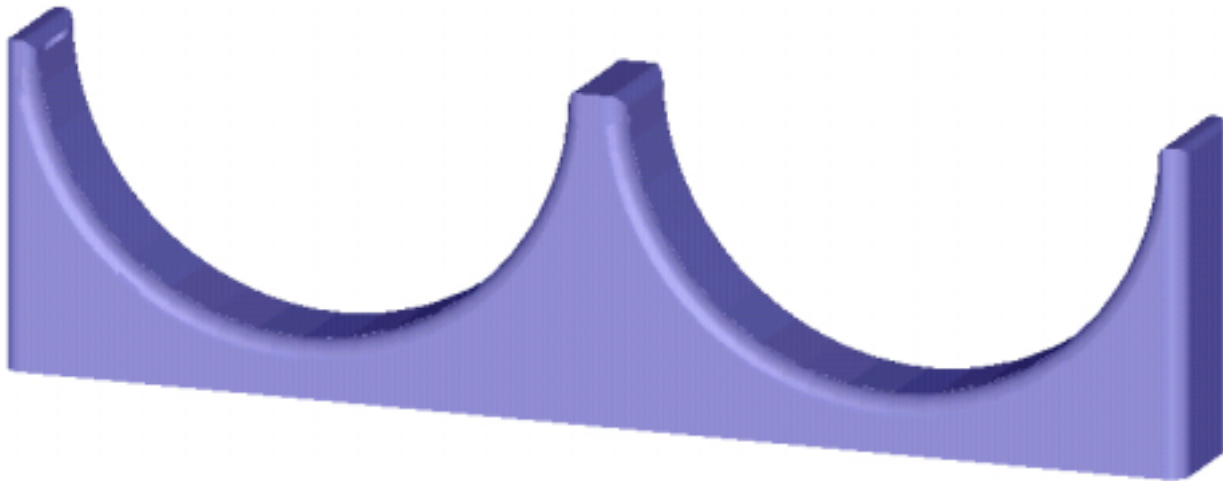
PONTOONS & CAMELS

All the **pontoons, pipe camels, & bridge camels** we manufacture are custom designs for specific applications. They can be made with a closed cell, crosslinked polyethylene foam covered with a Seathane® polyurethane skin or in an ionomer foam construction. As with our buoys, our pontoons & camels are of a collision survivable design.



POLYURETHANE CASTINGS

Urethane Technologies also manufactures **custom polyurethane castings**. We have a number of different Seathane® polyurethane casting resins that can be used depending on the physical properties required for the particular application.



Seathane® is a trademark of Urethane Technologies, Inc.

MOORING AND ANCHOR ATTACHMENTS FOR MBP SERIES BUOYS

MATERIAL: 304 STAINLESS STEEL

CLOSED "U" HOOK



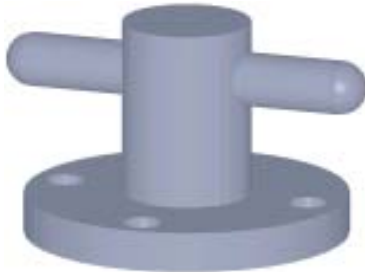
ITEM NUMBER	Fits MBP #	Flange Size	Inside Dia.	Rod Dia.
PU-24	24	1"	1-1/2"	3/8"
PU-36	36	1-1/2"	2"	1/2"
PU-48	48	2"	2-3/8"	5/8"
PU-60	60	3"	3-1/4"	3/4"
PU-72	72	4"	4"	1"
PU-96	96	6"	5-1/2"	1-1/2"
PU-96X	96X	8"	6-3/4"	2"

EYE



ITEM NUMBER	Fits MBP #	Flange Size	Inside Dia.	Rod Dia.
PE-24	24	1"	2"	7/8"
PE-36	36	1-1/2"	2-1/2"	1"
PE-48	48	2"	3-1/2"	1-1/4"
PE-60	60	3"	5"	1-5/8"
PE-72	72	4"	6"	1-7/8"
PE-96	96	6"	8"	2-3/8"
PE-96X	96X	8"	10"	3-1/2"

MOORING TEE (CRUCIFORM)



ITEM NUMBER	Fits MBP #	Flange Size	Post Dia.	Rod Dia.
PT-24	24	1"	1-3/8"	1/2"
PT-36	36	1-1/2"	1-7/8"	3/4"
PT-48	48	2"	2-3/8"	1"
PT-60	60	3"	3-1/2"	1-5/16"
PT-72	72	4"	4-1/2"	1-7/8"
PT-96	96	6"	6-5/8"	2-3/8"
PT-96X	96X	8"	8-5/8"	3-1/2"

TRIPLE TEE



ITEM NUMBER	Fits MBP #	Flange Size	Post Dia.	Rod Dia.
PTT-24	24	1"	1-5/16"	3/8"
PTT-36	36	1-1/2"	1-7/8"	1/2"
PTT-48	48	2"	2-3/8"	5/8"
PTT-60	60	3"	3-1/2"	3/4"
PTT-72	72	4"	4-1/2"	1"
PTT-96	96	6"	6-5/8"	1-5/16"
PTT96X	96X	8"	8-5/8"	1-7/8"

MOORING PLATES AND ANTI-THEFT BOLTS FOR 'RM', 'RMX' & RML' SERIES BUOYS

STANDARD MOORING PLATES (for Shackle Attachment)

Material: 304 Stainless Steel



Model #	Flange Size	Padeye Thickness	Hole Dia.
RM-12MC	1"	5/8"	7/8"
RM-18MC	1-1/2"	3/4"	1-1/8"
RM-24MC	2"	1"	1-3/8"
RM-30MC	3"	1-1/4"	1-5/8"

THEFT DETERRING MOORING PLATES

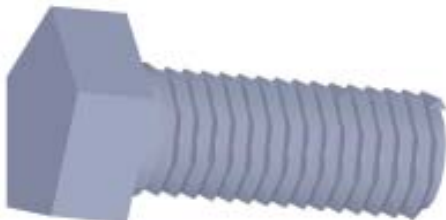
Material: 304 Stainless Steel
Neoprene Covered Rod Optional



Model #	Flange Size	Height	Rod Dia.
RM-12MN	1"	4-15/16"	1/2"
RM-18MN	1-1/2"	6-1/4"	5/8"
RM-24MN	2"	7-5/8"	3/4"
RM-30MN	3"	9-7/16"	1"

ANTI-THEFT PENTAGON HEAD BOLTS

Material: 304 Stainless Steel



Model #	Thread	Length of Thread
PBT-40	1/2"-13NC	1-3/4"
PBT-50	5/8"-11NC	2-1/4"
PBT-60	3/4"-10NC	2-1/2"

PBT-40S, PBT-50S & PBT-60S Pentagon 1/2"
Drive Sockets Are Available For The Above Bolts.

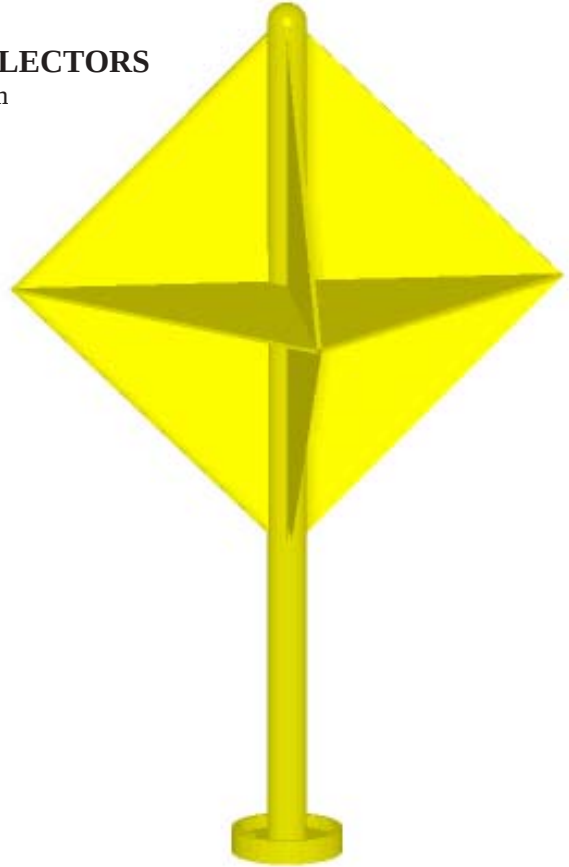
RADAR REFLECTORS FOR 'RM' SERIES BUOYS

MAST STYLE RADAR REFLECTORS

Material: 5086 Aluminum

Painted or Unpainted

Model #	Flg/Pipe Size	Height Ctr./Tot.	Reflective Area(Sq.")
RM-12R	1"	27.5"/36"	101-144
RM-18R	1-1/2"	24"/35"	229-324
RM-24R	2"	36"/51"	407-576
RM-30R	3"	48"/67"	636-900



SHORT STYLE RADAR REFLECTOR

Material: 5086 Aluminum

Painted or Unpainted

Model #	Flange Size	Height	Reflective Area(Sq.")
RMS-12R	1"	14"	104-148
RMS-18R	1-1/2"	15"	183-260
RMS-24R	2"	15"	201-285
RMS-30R	3"	22"	418-592



LIGHTS

Urethane Technologies does not manufacture marine lighting. We incorporate lights made by **Tideland Signal, ESSI, Automatic Power, McDermott, Vega** and other quality manufactures in our buoys. We will be happy to supply any of our lighted buoys with or without the lights.

Buoy lights are available in a wide array of ranges, colors and flash rates. They are available with photoelectric switches and various spare bulb or bulb changing features.

Photoelectric energy cells are available for lighting configurations using rechargeable batteries.



MOORINGS

Urethane Technologies will be supply moorings and anchors if you desire. We commonly manufacture mooring systems using the following materials:

- Concrete - 3000 lb. mix type II - anchors, clump weights & ballast weights
- Stud link anchor chain
- Standard link galvanized chain
- Spectra® 900 or Spectra® 1000 line
- Kevlar® line
- Nylon line
- Stainless aircraft cable
- Galvanized wire rope
- Steel or lead anchors, clump weights & ballast weights.
- Riser buoys

Since each mooring system is designed for specific requirements, it is difficult to be very specific in a general catalog of this nature. As such, this section includes information on certain mooring materials.

MOORING LINES

Mooring lines are available in a number of synthetic materials. Some of these are listed below for comparison.

• **Nylon:** A relatively strong synthetic rope that weathers fairly well. As it has a 1.3 to 1.4 specific gravity, it sinks.

• **Polypropylene:** A strong weatherable rope that floats. Polypropylene has a specific gravity of 0.9. This rope is usually yellow in color.

• **Kevlar®:** Ultra-high strength rope with very low stretch. Kevlar® does not weather well in direct sunlight and loses up to 10% of its strength when wet. It will withstand temperatures up to 500 degrees F. Kevlar® is not very abrasion resistant and care should be taken to avoid creating a “hinge point” when splicing. Tight bends should be avoided. Kevlar® has a slightly negative buoyancy.

• **Spectra®:** The strongest synthetic line. Spectra® is neutrally buoyant. It weathers extremely well, but should not be used in areas where the temperature may exceed 200 degrees F. Spectra® 900 has a moderate elongation (and creep) while Spectra® 1000 has a very low elongation. Both versions of Spectra® resist abrasion quite well and can be used over fairly tight bends.

STUD LINK ANCHOR CHAIN

Stud link anchor chain differs from standard chain by the reinforcing cross member at the center of each link. This cross member allows the chain to endure a greater pull force than standard chain without deforming.



CHAIN SIZE	WEIGHT IN POUNDS PER LINEAL FOOT	
	IN AIR	UNDER SEAWATER
5/8"	4.06	3.53
3/4"	5.33	4.64
13/16"	6.33	5.51
7/8"	7.33	6.38
15/16"	8.44	7.34
1"	9.56	8.31
1- 1/16"	10.78	9.37
1- 1/8"	12.00	10.43
1- 3/16"	13.56	11.79
1- 1/4"	15.00	13.04
1- 5/16"	16.56	14.40
1- 3/8"	18.11	15.75
1- 7/16"	19.78	17.20
1- 1/2"	21.56	18.74
1- 9/16"	23.22	20.19
1- 5/8"	24.89	21.64
1-11/16"	26.78	23.28
1- 3/4"	28.78	25.02
1-13/16"	31.00	26.96
1- 7/8"	33.11	28.79
1-15/16"	35.33	30.72
2"	37.33	32.46
2- 1/16"	39.67	34.49
2- 1/8"	42.11	36.62
2- 3/16"	44.67	38.84
2- 1/4"	47.22	41.06
2- 5/16"	49.89	43.38
2- 3/8"	52.56	45.70
2- 7/16"	55.11	47.92
2- 1/2"	58.56	50.92
2- 9/16"	61.56	53.53
2- 5/8"	64.67	56.23
2-11/16"	67.89	59.03
2- 3/4"	71.22	61.93
2-13/16"	74.56	64.83
2- 7/8"	78.00	67.82
2-15/16"	81.44	70.82
3"	85.00	73.91
3- 1/16"	88.67	77.10
3- 1/8"	92.44	80.38
3- 3/16"	96.22	83.67
3- 1/4"	100.11	87.05
3- 5/16"	104.00	90.43
3- 3/8"	108.11	94.01
3- 7/16"	112.22	97.58
3- 1/2"	116.67	101.45
3- 5/8"	125.56	109.18
3- 3/4"	133.33	115.94
3- 7/8"	143.33	124.64
4"	152.22	132.36

OPEN LINK CHAIN

Open link chain comes in several grades or strengths:

- Standard - Hardware store type
- Proof Coil
- High Test
- High Tensile Transport
- Alloy

Weights will vary from type to type, but the following is based on proof coil grade.

CHAIN SIZE	WEIGHT IN POUNDS PER LINEAL FOOT	
	IN AIR	UNDER SEAWATER
3/16"	0.40	0.35
1/4"	0.73	0.63
5/16"	1.10	0.96
3/8"	1.59	1.38
1/2"	2.75	2.39
5/8"	4.08	3.55
3/4"	5.81	5.05
7/8"	7.30	6.35



CONCRETE

Concrete is one of the least efficient, but least expensive, materials to use as a ballast or anchor. Concrete (at 144 lbs./cu. ft. in air) weighs only **80.13** lbs./cu. ft. under seawater. As such one only gets **56%** of the concrete's weight in air as usable sub-sea weight in an anchor. This compares with **87%** for carbon steel or **91%** for lead.

When using concrete materials in or near saltwater at **type II** (or a type I-II) concrete should be used. A 3000 lb. mix is preferable.

HANDY CONSTANTS AND FORMULAS

WEIGHT OF DISTILLED WATER :	@ 0° C.	(32° F)	-	62.4201 lbs./cu. ft.	(0.9999 kg./liter)
	@ 3.98° C.	(39.16° F)	-	62.4280 lbs./cu. ft.	(1.0000 kg./liter)
	@ 15.56° C.	(60° F)	-	62.3718 lbs./cu. ft.	(0.9991 kg./liter)
	@ 50° C.	(122° F)	-	61.6953 lbs./cu. ft.	(0.9883 kg./liter)
	@ 100° C.	(212° F)	-	59.8476 lbs./cu. ft.	(0.9587 kg./liter)

One cubic foot contains 7.4805195 gallons; thus a gallon of distilled water weighs 8.33 lbs.

For most practical purposes a liter equals a cubic decimeter; however a more exact figure is 1.000028 cubic decimeters.

One cubic foot of water @ 0° C. will make 1.11 cubic feet of ice @ 0° C.

The specific gravity of seawater in the Gulf of Mexico varies with salinity, but usually runs from 1.020 to 1.028. The generally accepted norm is a specific gravity of 1.024 (i.e. 63.87 lbs./cu. ft.).

DENSITY OF WATER

CENTIGRADE TEMPERATURE	VOLUME OF 1 KILOGRAM OF WATER IN LITERS*
0.0	1.000126
3.98	1.000000
10.0	1.000257
20.0	1.001732
30.0	1.004234
40.0	1.007627
50.0	1.011877
60.0	1.016954
70.0	1.022384
80.0	1.029003
90.0	1.035829
100.0	1.043116

* Atmospheric pressure of 14.696 lbs./sq. in. (1.0333 kilograms/square centimeter)

WEIGHTS ABOVE AND UNDER WATER

(in lbs./ cubic foot)

MATERIAL	ABOVE WATER	UNDER FRESH WATER (62.37 lbs/cu.ft)	UNDER SEAWATER (63.87 lbs/cu.ft)
Carbon Steel	489.60	427.23	425.73
Stainless Steel - 304	510.98	448.61	447.11
Concrete (Normal Density)	144.00	81.63	80.13
Aluminum (1100 or 6061)	169.32	106.95	105.45
Aluminum (5052)	167.42	105.05	103.55
Brass (Naval Cold Rolled)	528.77	466.40	464.90
Copper (Cold Rolled)	556.44	494.07	492.57
Bronze (SAE-660)	564.36	501.99	500.49
Lead	708.00	645.60	644.10
Spectra® 900 & 1000	60.49	- 1.88	- 3.38
Aramid (Kevlar®)	89.81	27.50	26.00
Nylon	71.10	8.73	7.23

LINE OF SIGHT RANGE FORMULAS

D = Range in Nautical Miles

RADAR: $D = 2.23 \left(\sqrt{hm1} + \sqrt{hm2} \right)$
or
 $D = 1.23 \left(\sqrt{hf1} + \sqrt{hf2} \right)$

Where:

- hm1 = height of radar scanner in meters
- hm2 = height of target in meters
- hf1 = height of radar scanner in feet
- hf2 = height of target in feet
- hm3 = height of eye in meters
- hm4 = height of object in meters
- hf3 = height of eye in feet
- hf4 = height of object in feet

VISUAL: $D = 2.06 \left(\sqrt{hm3} + \sqrt{hm4} \right)$
or
 $D = 1.14 \left(\sqrt{hf3} + \sqrt{hf4} \right)$

**URETHANE TECHNOLOGIES ALSO MANUFACTURES THE FOLLOWING
EQUIPMENT:**

**MOORING AND MARKER BUOYS FOR WATERS THAT INCUR THICK
ICE**

PIPE CAMELS

PIER PONTOONS

BRIDGE CAMELS

PONTOON BARGES

EQUIPMENT BARGES

OIL SPILL CONTAINMENT PONTOONS

DOCK BUMPERS

FLOATING STORAGE TANK ROOFS