B A L T I C 40

DESIGN SPECIFICATION

SLOOP RIGGED IMS RACER/CRUISER

MAIN DIMENSIONS

L.O.A.	12.000	m	39.37	ft
L.W.L.	9.975	m	32.73	ft
BEAM	3.880	m	12.73	ft
DRAFT	2.180	m	7.15	ft
DISPL.	6,800	kg	14,990	lbs
BALLAST	2,800	kg	6,173	lbs
I	16.400	m	53.81	ft
J	4.605	m	15.11	ft
P	14.600	m	47.90	ft
E	4.765	m	15.63	ft

All measurements are approximate.

BUILDER

BALTIC YACHTS Ltd.
Box 2320
SF-68555 BOSUND
Finland
Tel: 358-6 781 9200
Telefax: 358-6 781-9222

AGENT

BALTIC YACHTS, USA
53 America's Cup Avenue
Newport, RI 02840
www.balticyachts.com
Tel: 401-846-0300
Fax: 401-846-5757

DESIGNED BY

JUDEL/VROLIJK DESIGN
and
BALTIC YACHTS Ltd.

SPECIFICATIONS INDEX

1. HULL

1.10 GENERAL CONSTRUCTION

FRP sandwich construction to the highest specification, using unidirectional rovings and high grade resin to develop an extremely rigid yet light and well insulated structure.

End Grain Balsa is used as core material in the sandwich laminate. This in combination with a specially developed unidirectional roving creates a very rigid, strong and light construction. This sandwich construction has the following advantages in comparison with conventional FRP lay-ups:

- -Approx. 40-60 per cent lighter
- -Ca. 200-300 per cent higher panel stiffness
- -Increase in strength
- -Better insulation, less condensation and less noise
- -Strength of laminate will not decline as fast as a conventional FRP-lay-up due to less panel flexing
- -The high panel stiffness and usage of unidirectional will prevent "micro cracking" and reduce risk of blistering

A high grade resin is used in the lamination process to create an extremely strong high-tech laminate. The hybrid epoxy based resin has several advantages in comparison with the commonly used Polyester:

- -Higher elasticity. Higher elongation before breaking. Thus a better matching of the elasticity of the fibres and therefore a better usage of the strength potential of the fibres. The high grade resin elongates to approx. three times that of normal polyester.
- -Higher water resistance helps preventing blistering.
- -Better strength durability. Tests indicate that normal polyester laminates will lose approx. 50 per cent of its original strength during 10 years of use while the hybrid epoxy resins will lose only 10 per cent or less over the same period of time in combination with a sandwich construction

The combination of sandwich construction, unidirectional fibres and hybrid epoxy resin will make the yacht lighter and last longer. The lighter the yacht is, the more ballast it can carry for a given displacement. Thanks to this, the performance will be better and the yacht will be safer and easier to handle.

All high stress areas are specially strengthened with a build up of unidirectional roving orientated in the direction of the stress.

Transverse floors and longitudinal stringers are made up of a unidirectional roving and fabmat around a low density PVC foam core. There are limber holes in floors to allow drainage to sump.

1.11 STRUCTURAL BULKHEADS

Main structural bulkheads are built up of marine plywood. Visible surfaces are teak faced.

1.12 CHAIN PLATES

Stainless steel through bolted to longitudinal or transverse bulkheads, which are securely bonded to the hull and deck. Plates are provided with backing plates to spread loads adequately. Chain plates are grounded to a keel bolt for lightning protection.

1.13 ENGINE BEDS

Incorporated in hull, built up of ud-roving and fabmat around a PVC foam core. Special care is taken to ensure a rigid foundation and correct bonding.

1.14 MAST STEP

Fabricated aluminium alloy mast step bolted to re-inforced floors and stringers.

1.15 BILGE

Deep keel bilge. Access provided as practical to the bilge. There are limber holes in the floor frames to allow drainage to the sump.

1.16 BALLAST

External fin keel, cast to high accuracy, in lead with added antimony.

New, bulb-type, keel shape developed, based on extensive tank testing and practical tests on one-off racing yachts. Keel performance is optimised. The new keel shape has amongst other things the following advantages in comparison with a conventional fin type keel:

- higher lift/drag ratio
- lower center of gravity, increasing stability without adding ballast weight
- shorter cord lengths at top, improving laminar flow and lowering the drag

The lower center of gravity gives higher stability with added speed and power but also makes the boat easier to handle. Lower center of gravity also increases the boats resistance against knock downs hence making the boat safer and adds seaworthiness.

The keel is through bolted to the hull by cast-in stainless steel keel bolts

1.17 RUDDER AND RUDDER STOCK

The cantilevered semi-elliptical balanced spade rudder is moulded from Fiberglas and filled with PVC-foam. Foam filling under high pressure in special strengthened mould.

Rudder Stock :
The rudder stock is made of high strength, S-glass - Epoxy construction using "Vacu-Press" manufacturing system. The rudder stock is is tapered and dimensioned to the corresponding bending moments in order to minimise weight. The rudder stock passes through self aligning roller bearings and a stuffing box which is strongly bonded to the hull.

2. DECK AND DECK EQUIPMENT

2.10 GENERAL CONSTRUCTION

Hand laid-up moulded Fiberglas with Divinycell foam core for stiffening and insulation and a high density core re-inforcement incorporated in the mounting areas of winches and fittings. The deck has a high strength/weight ratio and is bonded to the hull with layers of roving. The deck is through bolted to the hull.

A pulpit and pushpit of best quality stainless steel tube are mounted on the bow and transom. Double life lines are installed passing through stainless steel stanchions. The life lines are of plastic coated stainless steel wire and set up with turnbuckles at the after end. The pulpit is fitted with navigation lights and the pushpit with a stern light. The height of pulpits, stanchions, spacing distance etc. conform to O.R.C. requirements. Stainless steel handrail for main companionway is provided. Best quality marine standard hardware and fastenings used throughout. Liferaft stowage provided in aft cockpit locker.

Finishing :
Deck is painted with high quality abrasion-resistance colour pigment gelcoat. Standard colour is white.

2.11 STEM HEAD FITTING

Custom fabricated stainless steel fitting provided with anchor roller and genoa tack fittings.

2.12 TOE RAIL

Toerail to be in teak. T-track recessed on top of toerail, aft of mast, for multi-purpose sheet take-off points.

Stainless steel stanchion bases with strong eyes for sheet take-off points.

2.13 WINDOWS, HATCHES AND PORTLIGHTS

Fixed Windows :

Windows in cabin trunk are fixed and made of perspex, securely attached and sealed off to the deck.

Sliding Hatch :

Companionway hatch is custom made sliding type, perspex with lock and washboard. Storage space for washboard.

Hatches and Portlights :

- -Foredeck 1
- -Main saloon 1
- -Toilet and pentry 2

2 Cockpit portlights provided to owner's cabin

2.14 MAIN SHEET SYSTEM

Main sheet traveller Antal or similar. Twin boom blocks with sheaves for terylene tails. Main sheet runs along the boom, forward to the mast, down to the deck and then aft to the main sheet winch bridge deck.

2.15 GENOA SHEETING SYSTEM

Two Genoa cars with roller bearings and teflon guides.

2.16 BLOCKS, JAMMERS and FITTINGS

2 double sheave footblocks
2 large snatch blocks
2 medium snatch blocks
2 spreacher blocks
2 extra snatch blocks

8 jammers

2 mooring cleats
5 halyard cleats
2 primary cleats
2 secondary cleats

2.17 WINCH SPECIFICATION

Winch equipment Lewmar or equal.

Winch list:

-Primaries/genoa sheet	2xLewmar 54 AST
-Secondaries/spinnaker sheet	2xLewmar 48 AST
-Mainsheet	1xLewmar 40 AST
-Genoa/spinnaker halyards	2xLewmar 44 CST
-Main halyard	1xLewmar 40 CST
-Reefs, cunningham etc.	2xLewmar 40 AST

Following handles are standard:

3 x plain 10"
1 x double lock-in 10"

3. INTERIOR

3.10 GENERAL

Joinery work is to the highest standard. All joinery is teakfaced with solid teak or laminated teak frames and capping. The joinery is varnished throughout. Visible surfaces are varnished and handrubbed to obtain a satin type of surface.

All doors are provided with retaining hooks and swing stops. Kick plates on steps and chafing pieces on sills are provided. Canvas leecloths provided for berths in owner's stateroom and guest cabins. Curtains are provided for side windows and portlights, quality and colour for curtains according to samples. Hanging lockers are provided with rods and hooks. Locker doors are fitted with louvers for ventilation. Teak gratings in head.

Floorboards with laid teak veneer. Access to bilge provided where practical. Ceiling lined with removable soft panelling.

Where particular sizes are not specified the material will be as light as consistent with good practice.

3.11 INTERIOR LAYOUT, COMPARTMENT DESCRIPTION

Description refers to interior, alternative I, conventional type. Interior alternative II available on request.

3.12 FORWARD CABIN

V- berth in centre. Storage space for sails, rigging equipment etc. under berth. Hanging locker to port and starboard.

3.14 TOILET COMPARTMENT

Moulded GRP basin in special hygienic gelcoat. Counter unit and lockers with ample provision for stowage. Foot operated fresh water pump. Marine toilet with overboard discharge. Mirror. Soap and paper holder. For the accurate specification of the equipment see plumbing section.

3.15 GALLEY AREA

Galley provided with 3 burner gimballed propane stove with oven. Stowage for propane tank is under helmsman's seat. Remote solenoid valve. The shut-off at the tank is operated from galley, a mechanical shut-off is at the stove. Isolated ice-box of stainless steel.

Stowage for cooking utensils. Garbage container. Adequate drawers and glass racks for stowage of crockery. Cutting-board. Formica-covered work top with deep fiddles. Deep stainless steel sink unit. Foot operated sea-water pump. Foot operated fresh water pump. Drying locker for dishes.

3.16 NAVIGATION STATION

Ample size navigation table with stowage for charts, pencils etc. Bulkhead space for mounting electronic instruments, radio equipment, etc. Master electric panel with safety circuit breakers and navigator's light. Navigator's belt.

3.17 MAIN SALON

U-settee to port. L-shaped settee to starboard. Storage space behind settee backrests. Centre table with folding wings, deep fiddles and centre stowage. Lockers outboard, port and starboard.

3.19 OWNER'S CABIN

One king-size berth. Storage space under berth. One hanging locker, settees to port and starboard. Bookshelf and small lockers.

4. PLUMBING

4.10 VENTILATION

Ventilation provided via hatches and port holes. See accurate specification at 2.13.

Standard Dorado ventilators mounted on boxes with water traps, 4 pcs. For locations see deck layout, two on mid deck and two on aft deck.

Engine room blower provided.

4.11 WATER SYSTEMS

Footpump operated fresh- and saltwater in galley. Footpump operated freshwater in head.

4.12 BILGE PUMPS

Two diaphragm type manual bilge pumps with removable handles. Locations, one at main companionway and one in the aft cockpit.

4.13 TANKS

All tanks are Baltic custom made in stainless steel with baffles and inspection covers.

approximate capacities:

- diesel fuel 125 litres (33 US gallon)
- fresh water 190 litres (50 US gallon)

Tanks are pressure tested.

Tank shut-offs provided. A waterseparator is installed on the fuel line. The fuel tank has a single deck fill marked FUEL.
a keelbolt.

The fresh water tank has a single deck fill marked WATER.

The tanks are securely laminated to the hull and foamed in for rigidity and sound insulation.

4.14 PIPING

Seacocks and through hull fittings :

High quality seacocks and through hull fittings of best marine standard. All through hull fittings located below the waterline are provided with seacocks.

Sea/fresh water, sanitary and fuel pipes :

Adequate vinyl piping for fresh water and sea water system. Sanitary hoses are especially made for toilet application and with a rigid vinyl helix for reinforcement. Copper tube fuel lines with appropriate valves.

5. ENGINE AND TRANSMISSION

5.10 MAIN ENGINE

The main engine is a VOLVO 2003T Turbo diesel with following characteristics:

- 32 kW (43 hp) at 3200 rpm (maximum continuous rating)
- 3 in-line vertical cylinders, 4-stroke engine
- cubic capacity 1.28 liters (78 cub.inch)
- direct injection turbo charged with after cooling
- electrical starting 12 V DC

Fresh water cooling for marine application with a heat exchanger and a sea water pump.

5.11 ALTERNATOR

55 A 12 V for starting battery
55 A 12 V for service batteries

5.12 ENGINE INSTRUMENTS AND CONTROLS

Engine instrument panel with a RPM meter, a low pressure alarm, a high temp alarm and a starting switch. An engine hour meter is located at the nav. station on the main panel.

Morse single lever controls de luxe version. Starting the engine is only possible with the gear shift in the neutral position.

5.13 GEAR BOX AND CLUTCH

Reduction gear box with reverse gear, reduction is 3:1.
Internal thrust bearing in gear box.

5.14 PROPELLER SHAFT AND PROPELLER

The propeller shaft is made of corrosion resistant steel AISI 329 The outboard end is supported with a stainless steel IOR-type shaft strut including rubber bearings. The stuffing box has a hose connection to the stern tube. Zinc anodes on shaft.

Propeller :
Two-blade feathering propeller with racing type hub.

6. MAST AND RIGGING

6.10 MAIN MAST

Three-spreader racing/cruising type mast. The spar is made from a hollow oval aluminium section and provided with aluminium airfoil spreaders. The halyards are internal and the mast will be provided with appropriate exits, halyard blocks and fittings.

Special emphasis has been taken to design a mast section with higher moment of inertia, fore and aft, than a racing spar. This is in order to minimise the need for use of running backstays in a cruising situation but still allow enough mastbend for racing.

6.11 BOOMS

Main boom is a tapered aluminium alloy hollow section with appropriate fittings, rollers and cables. The slab reef system with reefing lines runs through sheaves in boom end. The port and starboard reefing lines lead aft to centre cockpit trim winches via turning blocks.

One aluminium spinnaker pole, hollow section, with shotgun type outboard end and stud fitting on the inboard end.

6.12 STANDING RIGGING

Standing rigging is rod and the transverse rigging arrangement is discontinuous. All fittings like shroud attachments, linking at spreader ends are carefully chosen to meet requirements like lower windage and light weight. All fittings are so called high fatigue type for higher safety, strength and durability.

1 Headstay	Rod
1 Backstay	Rod
2 V3/D4 Upper shrouds	Rod
2 D3 Upper diagonal intermediate shrouds	Rod
2 V2 Vertical intermediate shrouds	Rod
2 D2 Lower diagonal intermediate shrouds	Rod
2 D1 Lower shrouds	Rod
2 V1 Main shrouds	Rod
2 Running backstays	1x19 s.s. wire + Kevlar tail
1 Babystay	1x19 s.s. wire

6.13 RUNNING RIGGING

Running rigging is made of 7x19 stainless steel wire plus terylene tails as appropriate. Pad eyes are all Baltic custom made.

Item :

1 main halyard, with screwshackle

1 main sheet
2 main traveller adjusting sheets

2 genoa halyards, with snapshackles
2 genoa sheets

2 spin halyards, with snapshackles
2 spin sheets, with snapshackles
2 spin aft guys, with snapshackles
1 spin toplift, with snapshackle
1 spin foreguy, tackle 2 : 1 with block on boom end

2 reefing lines
1 cunningham line
1 kicking strap (preventer)

6.14 HYDRAULICS

Navtec Integral backstay adjuster.

7. ELECTRICAL, ELECTRONICS

7.10 MAIN SWITCHBOARD

Baltic custom made with automatic safety circuit breakers. Indication diodes, amp.meters, volt meters and tank level meters are provided. A 12 V DC system throughout the boat.

7.11 BATTERIES

All batteries are heavy duty deepcycle marine type of the following capacities:

- main engine starting battery 12 V DC 120 Ah
- service batteries 12 V DC 240 Ah

7.12 LIGHTING

Following lights are provided:

Interior :

- navigator's light
- 1 dome light red/white at nav. station
- 6 dome lights white
- 4 fluorescent lights white
- 2 reading lights white

Exterior :

- pair bow lights red/green
- stern light white
- steaming light white
- tri-color masthead light
- anchor light
- deck flood light
- compass light

8. STEERING SYSTEM

The steering is provided by a light weight "destroyer type" wheel The wheel is made of stainless steel, welded and polished construction. Baltic custom made pedestal. The steerer has sprockets and non magnetic chains leading to steering cables. The steering cables are stainless steel wire and the cable sheaves have a score diameter of not less than 20 times the wire diameter. The steering sheaves are mounted on brackets securely bonded to the structure.

One aluminium alloy tube emergency tiller, storage in cockpit locker.

9. MISCELLANEOUS

9.10 EQUIPMENT

Following items will be provided:

- Steering compass, SUUNTO D-165 mounted on steering pedestal.
- 4 fenders
- flagstaff
- bosuns chair
- boat hook
- 4 docking lines
- instruction manuals for engine, plumbing and electrical system
- tool set for small onboard repairs
- service spare part kit for rig, plumbing, engine and electrics

A drop forged galvanised bow anchor, Danforth type, is provided. The anchor weight is 12 kg.

Galvanised steel chain 8 m and 50 m anchor warp.

NOTE:

These specifications are believed to be correct at the time of printing. However, there may be changes and alterations to the finished yachts thanks to continuous improvements. Baltic Yachts therefore reserves the right to amend specifications, materials and equipment without prior notice. Alterations will not be considered retroactive for yachts already delivered or under construction.

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