

SWAN 54
SPECIFICATION

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SWAN 54

SPECIFICATION

Dimensions

LOA	16.48 m	54.07 ft
LWL	14.40 m	47.24 ft
Beam max	4.75 m	15.58 ft
Draught (light)	2.44 m	8.01 ft
Displacement (light)	22.000 kg	48.500 lbs
Displacement (loaded)	26.000 kg	57.300 lbs
Ballast, standard keel	8.200 kg	18.100 lbs
Optional dagger board keel weight	10.150 kg	22.400 lbs
with twin rudders draught (light)	1.40 m/3.70 m	4.59 ft/12.14 ft
Engine Yanmar with folding propeller	81 kW	110 Hp

Rig and sail dimensions

IG	20.87 m	68.47 ft
J	5.95 m	19.52 ft
P	20.08 m	65.88 ft
E	6.70 m	21.98 ft
SPL	6.50 m	21.33 ft

Sail areas

Fore triangle	62.2 m ²	670 sq.ft
Main sail	81.1 m ²	873 sq.ft
100% Jib	61.8 m ²	665 sq.ft
Spinnaker	210 m ²	2260 sq.ft
Code Zero	120 m ²	1292 sq.ft

Tank capacity

Fuel	495 l	130.7 USg
Water	684 l	180.6 USg
Hot water	50 l	13.2 USg
Holding tanks	120 l	31.7 USg

Battery & power sources

Service battery, gel cell	24 V 626 Ah (20h)
Starting battery, AGM	12 V 50 Ah AGM
Shore power	230 V 50 A 50 Hz
Battery charger	80 A

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CE-Approval Category A Ocean

Builder

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00 GENERAL CONDITIONS

The specification is believed to be correct at the time of printing and supersede any previous versions or translations to other languages.

The specification is to be read in conjunction with the sail plan, deck drawing and interior layout. While details may be changed as the result of experience in construction or use of the yachts, the standards of quality and completion will be maintained to furnish a yacht ready for service.

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The Builder reserves the full right to substitute any equipment, materials or components within this specification with any functionally equivalent equipment, materials or components without prior notice.

The Builder guarantees skilled workmanship, in keeping with the best yacht practice for a vessel this size and in conformity with the specifications and drawings.

00.01 Commissioning

01 Documentation

Builder's Certificate

A Builder's Certificate will be supplied when full payment according to contract has been received.

Bill of Sale

A Bill of Sale will be supplied, if needed, when full payment according to contract has been received.

The Bill of Sale verifies that there are no liens on the yacht.

Certificate of Delivery

A Certificate of Delivery is to be signed by both parties at the time of the acceptance.

The Certificate of Delivery signifies the formal transfer of ownership and simultaneously commences the warranty period at the given date.

Warranty

The warranty period for the yacht is two (2) years from the date of delivery. For purchased items, equipment or systems, the Builder will provide the necessary documentation for proof of ownership, warranty and any other documentation and/or manuals as supplied.

00.02 Tests and trials

The correct and safe function of onboard installations and systems are verified by testing and trials as appropriate for each individual yacht.

The requirements for test and trial approval are based on safety, functionality, performance and reliability as demanded by the yachts specification, current regulations and the yards high standards.

Testing and trials are done while the yacht is afloat in order to secure realistic data, meeting or exceeding demanding criteria.

Records of testing and trials are kept on file at the yard for future reference.

00.03 Trim

The Builder reserves the right to adjust the ballast for trimming purposes.

The flotation of the yacht will correspond to the displacement calculated by the builder. The side trim tolerance is +/- 0.5° and the longitudinal trim tolerance is +/- 0.1°

00.04 Construction approvals

CE-Approval Category A Ocean

00.05 Hull identification

The model and hull number is shown on the Builder's Plaque and the CIN-code on the hull.

00.06 After sales service

Nautor provides unique technical support and worldwide spare parts service. Records are kept of Nautor's Swans and of the drawings used to build them.

01 HULL

00 General

Scantlings, materials and workmanship throughout are consistent with the construction of a light hull, but without any sacrifice of strength or stiffness.

01.01 Laminate

00 General

The hull is of single skin construction using glassfibre reinforced vinylester laminate. There are multiaxial or unidirectional fibres in selected areas.

01.02 Stiffening

01 Stiffeners

All stiffeners are unidirectional glass layups. Stringers and web frames are pre-made hollow sections that allow them to be used for ventilation purposes or as cable conduits. Engine bed is of GRP with steel inserts. Special care is taken to assure rigid foundation and proper adhesion to hull.

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02 Structural bulkheads

Structural bulkheads are marine plywood with GRP reinforcements. They are laminated to hull and deck

03 Chain plates

The stainless steel main shroud chain plates are bonded to the hull.

01.03 Hull finish

00 General

Gelcoats are of weather-resistant NGA type.

01 Topsides

Standard topside gelcoat colour is white NGA 9650.

02 Boot top and water lines

Standard boot top and cove stripe gelcoat colour is dark blue NGA 7344.

04 Bottom

Bottom treatment with gelshield and antifouling is optional

01.04 Keel

00 General

The keel is a lead casting with antimony and carefully finished to accurate shape. Cast-in keel bolts are of high-tensile stainless steel.

01.05 Steering system

01 Rudder

The rudder is of foam filled GRP with tapered hi-tensile stainless steel stock, supported by two self-aligning bearings. Weed deflector in front of rudder.

02 Rudder bearings and quadrant

Sheaves provided with guards to prevent jamming of steering wire. Aluminium quadrant with end stops bolted to rudder stock.

03 Steering pedestals

Composite pedestals with roller bearings, brake and crash bar.

04 Steering wheels

Two 1.05 m stainless steel wheels with elk hide cover, 2.1 turns H.O. to H.O.

05 Emergency steering

Emergency tiller stowed in lazarette.

01.06 Mast step

00 General

The mast is stepped through the deck onto a composite mast step. There are tie rods from the mast collar. The mast shoe is aluminium.

01.07 Through hull fittings

00 General

All the through-hull connections below waterline are sea cocks of bronze, finished flush with outside and located in an accessible position. The inboard side of the sea cocks will be fitted with a stud long enough to take two hose clamps. The only exception to this is the galley refrigerator through hull, which has a cooling coil and is non flush.

01.08 Transom

00 General

The lazarette is separated by a watertight bulkhead from the interior.

Note: At no time should gasoline be stowed in the lazarette or anywhere inside the boat.

01 Transom hatch

The transom folds out to form a full sized platform with fittings for a bathing ladder. Helmsman's seat is integrated in the transom hatch. The platform is operated by electrical cylinders.

01.09 Hull windows (Optional)

Two tinted hull windows on each side of the saloon of 6+6 mm toughened laminated glass.

02 DECK

00 General

Scantlings, materials and workmanship throughout are consistent with the construction of a light deck without sacrificing strength or stiffness.

02.01 Laminate

Deck is of sandwich construction, using multiaxial glass fibre reinforced isopolyester laminate, with low-density closed cell foam core, and is bonded to the hull. High-density core or solid laminate is under deck fittings. Unteaked deck surfaces will have a white gelcoat finish.

02.02 Deck finish

Standard coaming and coach roof gelcoat colour is white NGA 9650. Standard coaming stripe gelcoat colour is dark blue NGA 7344.

02.03 Teak woodwork

01 Teak on the deck

The teak deck consists of 45 x 9 mm quarter cut teak battens with 4 mm black Sikaflex 290 caulking. Nominal thickness, on side decks, on bathing platform and on cockpit sole and seats. Vacuum packed and bonded to the deck with epoxy adhesive with screws only in hatch frames and bonders. The teak toe rails are 35 mm high. Two removable teak footrests for helmsman are mounted behind the steering wheels. As an option teak can also be laid on top of the coach roof.

02.04 Winches and windlasses

01 Drum winches

- Two Lewmar 55 EST Evo electrical main sheet winches in cockpit
- Two Lewmar 65 EST Evo electrical-primary winches in cockpit

All halyards and control lines are led down to the main sheet and primary winches in the cockpit.

03 Anchor windlass

The Swan 54 has a stainless steel Lewmar V4, 24 V windlass with gypsy only for 10 mm Lewmar Grade 40 chain and one remote control in the bow locker.

02.05 Bow fitting and anchoring

00 General

Stainless steel stemhead fitting has two Delrin anchor rollers and an eye for the gennaker tack line block. Stainless steel chain plates, headstay recessed with trough deck furler. Main shroud chain plates bolted to reinforced web frames. Backstay chain plates attached to hull structure.

02.06 Sail handling systems

01 Tracks

- Two aluminium jib sheet tracks
- Two genoa cars with adjustable pin stops
- Two high load track end stop.
- Two impact end stop

02 Blocks

- Two 100 mm main sheet blocks on coach roof side by side.
- One 100 mm single block aft and one double 100 forward on the boom for main sheet.
- Two 100 mm single blocks on forward end of the boom, for mainsheet to be led down to deck on starboard and port sides
- Ten 100 mm mast base blocks recessed at mast
- One snatch block for tack line, to be used on the eye on the stemhead fitting
- Two 100 mm gennaker sheet/runner blocks, mounted on each side forward of the pushpit
- One 60 mm, single block under deck at stem head for furling line
- One 60 mm stand-up block aft on port side for furling line

03 Jammers and clutches

- Two Antal DVJ high load jammers for jib halyard, mounted one each side on cockpit coaming
- Two Antal Plus jammers for gennaker halyards, mounted one each side on cockpit coaming
- One Antal Plus jammer for staysail halyard, mounted on port side on cockpit coaming
- Two Antal Plus jammers for reef lines, mounted one each side on cockpit coaming
- One Antal DVJ high load jammer for main halyard, mounted on starboard side on cockpit coaming
- Two Antal Plus jammers for the Jib sheets, mounted one each side on cockpit coaming.
- Two Antal Plus jammers for the mainsheet, mounted on each side on cockpit coaming in front of the aft winches.
- One Antal Plus jammer aft on port side for furling line

02.07 Deck fittings

01 Pulpit and pushpit

Pulpit and pushpit, 610 mm high according to ISAF/ORC requirements, made of Ø 25 mm stainless steel tube.

03 Cleats and fairleads

There are three pairs of mooring cleats, 400 mm, installed one pair forward, one pair amidships and one pair aft.

There are two pairs of fairleads, installed one pair forward and one pair at transom. One pair of stainless steel curved roller fairleads, installed aft.

04 Life lines and stanchions

The spacing of the lifelines and stanchions are conforming to ISAF/ORC requirements. Stainless 5 mm wire lifelines with polished turnbuckles and eyes. Lead through 610 mm high stainless steel stanchions. Gates in lifelines on each side amidships and in the pushpit.

99 Other

- One socket for flagpole on pushpit
- Five Wichard 6504 folding padeyes for jackstay attachment in the cockpit and two on the side decks
- One Wichard 6506 folding padeye for inner forestay attachment
- One Wichard 6505 folding padeye for staysail tack
- Two Wichard 6505 folding padeys for mainsheet block attachment mounted each side of the companion way hatch.
- Five Wichard 6504 folding padeyes in cockpit for safety lines
- Two boarding ladder fittings, one pair mounted each side at lifeline gates

02.08 GRP mouldings and vents

- Sprayhood recess
- Storage locker in cockpit
- Halyard lockers in each side of cockpit coamings
- LPG locker in aft part of port cockpit coaming

02.09 Hatches and windows

00 General

All hatches are supported by gas cylinders.

01 Deck hatches

- One Lewmar flush Size 30 above port aft cabin
- One Lewmar flush Size 30 above galley
- Two Lewmar flush Size 70 above saloon
- Two Lewmar flush Size 70 above owners cabin
- Two Lewmar flush Size 41 above forward shower and toilet
- Two Lewmar flush Size 41 above forward guest cabin

02 Teak covered hatches

- One hinged hatch to forepeak locker
- One hinged hatch to lazarette
- One hinged stowage locker in cockpit with space for LPG
- One hinged hatch in cockpit to starboard storage locker

03 Portholes

- Two openable tinted acrylic portholes in coamings, flush mounted with aluminium frames, one in port aft head, one in galley
- One Giot Cristal 40.24R openable tinted acrylic porthole, flush mounted with aluminium frames, from port aft cabin to cockpit
- One Giot Cristal 40.24R openable tinted acrylic porthole, flush mounted with aluminium frames, from starboard storage space to cockpit

04 Deck house windows

Parasol grey deck house windows made by Form glass. The windows are chemically toughened, laminated and glued to the superstructure. There are four windows, two on each side.

05 Main companionway

The lockable companionway has a manually operated sliding hatch of tinted acrylic drop board.

02.10 Cockpit

01 Cockpit seat

Two seats with back rest on each side. Helmsman seats integrated into transom hatch and coamings.

03 Cockpit table

Fixed varnished teak cockpit table with folding leaves

02.11 Canvas work

01 Spray hood

Large spray hood over the companion way with a recess in the deck, including a canvas cover over the recess.

03 INTERIOR

00 General

The interior will be built, according to contract layout drawings. European oak is used for visible interior.

- Cabinets, tables, bureaus, seats, dressers have rounded corners
- Doors, partitions and panelling are oak-faced plywood
- Self-engaging latches with bumpers to hold doors in open position
- Hanging lockers are equipped with rods and hooks
- Drawers are secured with latches

01 Finish

All joiner work in the living area is done in accordance with the best yacht practice, using first-grade materials. Oak with satin varnish finish is used for the visible woodwork. There is a companionway ladder with non-slip steps.

02 Overhead panels

Vinyl covered removable overhead panels are installed in all accommodation areas.

03 Floorboards

The floorboards are of 15 mm plywood and the top face is oak with thin teak stripes. The floorboards are varnished with six coats of urethane varnish and have the same satin finish as the rest of the interior. Two suction lifters will be provided.

04 Topsides

Topsides where visible are lined vinyl covered

05 Cabin door hardware

Hardware and outfit components are of a type designed to eliminate rattling or hanging. The cabin doors are provided with double action locks and with catches to hold them in open position where possible.

The door to owner's cabin is lockable.

06 Locker door hardware

All locker doors are fitted with high quality furnishing hinges and are kept closed with push button latches. A doorstopper will be fitted where needed.

07 Mirrors

All bathroom mirrors are glass.

08 Blinds and screens

Mosquito screens and blinds for all deck hatches. Mosquito screen for the companion way.

09 Hand rails

Hand rails at companion way and in saloon overhead.

03.01 Bulkheads

01 Structural bulkheads

Structural bulkheads are of marine plywood with GRP reinforcements.

03.02 Forward Cabin (Owner's cabin)

00 General

The owner's cabin has a double berth on centerline. Two drawers are under the berth and hanging lockers on each side aft. There is a locker on centerline, with a mirror on the bulkhead above the locker. There is a book shelf on forward bulkhead.

Hull side is exposed beside the berth and is covered with white vinyl covered panels.

01 Beds

Foam mattress, 12.5 cm, (5"), over Scandi-Flex battens. The bed is fitted with three oak plywood leeboards.

02 Lockers

Hanging lockers are equipped with rods, hooks and automatic lights.

06 Lights and switches

Two reading lights, Hobart LED with switch, chrome 10-30VDC above double berth, two Frensch F-19 above vanity desk. Four recessed Frensch F-19 and six outboard pointing Frensch F-7 spotlights in overhead. There is automatic light in hanging lockers.

03.03 Forward amidships cabin (Guest cabin)

00 General

Double berth outboard and hanging locker forward. Upper lockers are outboard.

01 Bed

Foam mattress, 12.5 cm, (5"), over Scandi-Flex battens. The bed is fitted with one canvas lee cloth. Three drawers are under the berth.

02 Lockers

Hanging locker is equipped with a rod, hooks and an automatic light.

06 Lights and switches

Two reading lights, Hobart LED with switch, chrome 10-30VDC above double berth, two recessed Frensch F-19 and three outboard pointing Frensch F-7 spotlights in overhead. There is automatic light in hanging locker.

03.05 Aft cabin

00 General

There is one aft cabin with double berths on port side aft. Hanging locker with drawer on lower part located forward of the berths. There are upper lockers outboard. Hull side is exposed outboard and will be covered with white vinyl panel.

On starboard side aft there is a large storage space with entrance through door in the galley. The storage has space for the optional generator and washer/dryer. A pipe cot bed can be added as an option.

The storage can optionally be changed into a larger single bed cabin resulting in a shorter galley.

01 Beds

The beds have foam mattress 12.5 cm (5") plywood bottoms. The beds are fitted with a teak plywood leeboard. There is storage under the berths.

02 Lockers

Hanging lockers are equipped with rods, hooks and automatic lights.

06 Lights and switches

Two reading lights, Hobart LED with switch, chrome 10-30VDC above double berth, two recessed Frensch F-19 and three outboard pointing Frensch F-7 spotlights in overhead. There is automatic light in hanging lockers.

03.06 Saloon

00 General

U-shaped settee is on port side, with a rectangular dining table and two chairs. The navigation station is on starboard side. Outboard lockers or hull windows are optional on both sides. A teak handrail will be installed in the overhead.

02 Lockers

Place for entertainment electronics located outboards on starboard side.

03 Settees

U-shaped settee at dining table will have a depth of 500 mm. Stowage under sofa and behind backrests outboards.

04 Tables

Saloon dining table size is 900x1400 mm.

05 Upholstery and fabrics

Settee and curtain fabrics shall be chosen from a selection offered.

06 Lights and switches

Six recessed Frensch F-19 and five outboard pointing Frensch F-7 spotlights in overhead. Two recessed Frensch F-19 lights above saloon table. One Frensch F-7 and one Frensch F-4 at chart table.

03.08 Galley

01 Finish

Lockers and bulkheads are oak. Counter tops are of Cameo White Corian.

02 Sink and faucets

One stainless steel sink with one kitchen faucet, the model is Hansgrohe Talis S.

03 Lockers and drawers

There are lockers and drawers for utensils. Lockers with sliding doors are mounted outboard of the stove.

06 Lights and switches

Two recessed Frensch F-19 (one light can also be used as a leading light) and two outboard pointing Frensch F-7 spotlights in overhead. There are two Frensch F-7 lights above the sink and one Frensch F-19 night light.

08 Domestic appliances

- Protected space for a Force 10, 3-burner gimbaled LPG stove, with oven protected by stainless steel guard
- One front loaded refrigerator, 142 l (5.0 cu.ft)
- One top loaded freezer, 63 l (2.2 cu.ft)
- Waste bin under sink

99 Other

To get additional working space, two Corian pieces can be placed on top of the stove.

03.10 Navigation area

00 General

The navigation area is located in the saloon on starboard side with instrument panels facing forward.

01 Chart table

The chart table is made of oak. There are drawers and a shallow storage space under the table top.

02 Instrument panels

Space for electronics in the panels.

03.11 Heads, showers general

00 General

Owner's head with bidet shower and separate shower stall forward on starboard side. Guest head aft on port side, with bidet type shower.

01 Finish

There is white GRP lining up to wash basin level. Glacier White Corian wash basin and counter top. Hot and cold water mixing tap also serving the shower.

02 Wash basin

Both heads have Glacier White Corian wash basin and counter top.

03 Faucets

Faucets at wash basin in both heads, and shower set in forward shower.

05 Mirrors

Glass mirrors on bulkhead or upper cupboard doors.

99 Other

- General lighting will have spotlight down lighting (See 06.11)
- One soap dozer in each head

03.16 Engine room

00 General

Engine room is located under the companion way. Removable front part of engine box, service hatches each side. Electrical switchboard and main switch locker starboard side.

04 ENGINE AND HYDRAULICS

00 General

Engine space is internally sound insulated.

04.01 Main engine

01 Engine

The engine is a Yanmar 4 JH 110CR, with ZF25A gear and a 3-bladed folding propeller. Engine and reduction gear are supported on flexible mounts.

04.02 Propulsion system

01 Propeller shaft

- Shaft is a Aquamet 22
- Gear is a ZF25A
- Reduction is 2.714:1

02 Propeller

Three bladed folding propeller.

04.03 Cooling system

00 General

There is a thermostatically controlled fresh water cooling system which has a heat exchanger for the engine. A separate heat exchanger for the consumable fresh water is included in the same circuit making hot water available whenever the engine is running. There is a Seawater intake with strainer. Discharge through exhaust system.

04.04 Fuel system

00 General

The feed line to the engine is equipped with 10 μ fuel filter/water separators with water alarm. Dual version mounted for main engine to permit uninterrupted running of the engine while changing filter elements. All flexible hoses are according to ISO7840.

01 Tanks

The fuel capacity is 495 l (130.7 USg), in three stainless steel tanks with gauges. One filler line with valve group for each tank. Tanks vented to hull, just below the shear line. Fuel filter/water separator with water alarm and shut off valve on feed line to engine.

04.05 Exhaust system

00 General

The Halyard wet exhaust system has fibreglass silencer type HEE for main engine. Vetus NLP silencer gas/water separator type Vetus LGS installed for diesel generator. Water is discharged below the waterline and exhaust gases from main engine and diesel generator exit under the transom. Silencers are provided with a drain tap.

04.07 Oil handling system

00 General

Reverso GP3312 oil drain pump for th main engine.

04.08 Engine controls

00 General

Cockpit starboard coaming:

- Engine control ON/OFF
- Start and stop buttons
- Single lever control of throttle and gear shift
- Engine instruments

- Control light for starting and service battery charging
- Coolant temperature with alarm
- Oil pressure with alarm
- Tachometer with hour meter

04.10 Firefighting system

There is a total flooding Clean Agent (FM200) fire extinguishing system for engine room space and generator engine room, with manual remote control.

04.20 Hydraulics

01 Hydraulic functions

Manual hydraulic functions for the rig:

- Boom vang
- Out haul
- Backstay tensioner

05 PLUMBING

00 General

Components and valves are labelled.

Sea water hoses are of reinforced PVC tubing, fresh water hoses mainly of nylon tubing. Water tanks of stainless steel provided with baffles, inspection cover, sounding plug and vent pipe.

05.01 Fresh water system

00 General

A pressurised hot and cold water system will be installed. Fresh water piping's are of polypropylene, nylon and copper tubing.

Filler line on side deck is led to a valve chest. The valve chest has valves for each water tank and for water pressure pumps.

Hot and cold water will be distributed to all heads and to the galley.

05 **Water tanks**

Hot and cold pressure water with back-up foot pump for cold only in galley. The water capacity is 684 l (180.6 USg), in four tanks with gauges.

There are single lever mixing faucets for washbasins and galley sinks. The consumable water can be heated either with engine cooling water, or with a heating element working on AC.

05 **Pressure pumps**

Water pressure system equipped with one Headhunter X-Caliber 24VDC pump, capacity 38 l / min.

05 **Hot water system**

There is a hot water tank, Isotemp 50 l (13.2 USg).

05.02 **Sea water system**

00 **General**

Sea cocks of bronze for all through-hull connections below waterline located in accessible position. Inboard side of sea cocks fitted with stud long enough to take two hose clamps.

- Sea water is used for toilet flushing

05.03 **Grey water system**

00 **General**

Wash basins in all heads and the galley sink are drained directly to sea cocks. Shower trays are drained with an electrical pump to overboard discharge.

05.04 **Black water system**

00 **General**

All toilets are connected to black water holding tanks and sea cocks with selector valve in between for choosing to flush directly over board or into tank.

01 Tanks

Two black water holding tanks are provided, one for aft toilet and one for forward toilets, capacity 62 l (16.4 USg) + 58 l (15.3 USg) with indication at 3/4 full and full. The tanks are fitted with baffles, inspection covers, and vent lines.

02 Tank discharge systems

The tanks can be emptied by 24 V electrical pumps to sea cocks via siphon breaks. Each tank is also provided with a deck suction line.

03 Toilet systems

There are manual PAR Jabsco toilets for aft and forward heads.

05.05 Drainage system

00 General

Deck drains will be connected mainly to outlets above waterline.

The galley sink and washbasin drainage is through sea cock. Shower trays drained with electrical pumps to sea cocks.

01 Bilge pump systems

There are three separate bilges, i.e. fore peak, amidships and lazarette bilge. Fore peak bilge is equipped with a DC driven submersible pump, ca. 100 l/min. Main bilge is equipped with a DC driven submersible pump, ca. 140 l/min. Lazarette is equipped with a DC driven submersible pump, ca. 100 l/min.

Two manual Whale Titan pumps, one in cockpit and one in saloon, ca. 100 l/min, are installed as back-up pumps, one for main bilge, lazarette bilge with selector valve and one for main bilge, engine room with selector valve. One manual Whale Urchin pump, ca. 55 l/min installed for fore peak drain. Special attention is paid to ensure that bilge pump suction pipes are mounted in easily accessible positions to allow debris to be cleared. All outlets are mounted about the waterline.

03 Deck drains

All deck drains, that cannot be direct over board, are connected to integrated through hull fittings on each side.

05.06 LPG system

A manual leak detector and a remote magnetic shut off valve are placed inside the gas bottle locker. There is also a manual gas shut off valve in the galley.

There will be a space for two 6 kg aluminium gas bottles (Nautor supplied if the boat is launched and sails away from Pietarsaari) in a drained locker in helmsman seat. LPG is used for the gas cooker in galley, see section 03.08.08.

Gas installation according to ISO 10239

05.07 Ventilation

01 Natural ventilation

Natural ventilation in saloon and in the cabins is by open able deck hatches and portholes. Exhaust blowers in galley and heads.

03 Galley fan system

Galley extractor EBM fan is in lazarette.

04 Engine room ventilation

Two air inlets through steering pedestals and lazarette, outlet with a thermostat controlled blower to the transom.

05 Battery box ventilation

The service battery box is ventilated with a thermostat controlled blower through mast to the outside of the yacht.

05.09 Refrigeration system

00 General

There are two battery-driven 24 V refrigeration units with thermostat control for the refrigerator and the freezer. The freezer can also be used as a refrigerator.

There is one Isotherm SP2554 compact compressor for refrigerator and one Isotherm Magnum 2511 compressor for the fridge.

05.10 Galley equipment

See section 03.08.08.

06 ELECTRICAL

00 General

The electrical components are chosen based on the Yards long experience in the yachting industry. Electrical diagrams will be delivered with the yacht, for both DC and AC. Cables are labelled with identification numbers at both ends.

At watertight bulkheads wires are run up to deck head height when penetrating the bulkhead or are sealed in place to produce water tightness.

24 V DC system with insulated return. 230 V AC is a three-wire grounded system. Wires are sized to minimise voltage drop. For lightning protection the headstay, backstay (unless used as SSB antenna), main shroud chain plates and mast step are grounded to ballast keel bolts with heavy cable.

06.01 AC-system

00 General

The AC system is a 230 V 50 Hz single-phase three-wire AC-system. The AC system can be fed by 230 V 50 A shore power inlet.

Shore inlet provided with polarity alarm, main switch and land connecting cable. Outlets provided with earth fault protection. There is connection to battery charger and water heater resistor element.

01 Shore power

Shore inlet plug, 230 V is installed on coaming on starboard side. Shore power cable is 15 m long.

02 Generator

The generator is optional equipment.

03 Chargers

One Mastervolt, Mass 24 V 80 A charger with 3-step charge characteristics for service battery. There is temperature sensing at the battery.

The service batteries are charged by a 110 A alternator with three step regulation on the main engine, or by a 80 A Mastervolt ChargeMaster battery charger working on AC. 80 A engine alternator for the starting battery. The genset has its own alternator for genset starting battery.

07 Outlets AC

- 230 V outlets of schuko type
- One double outlet in saloon, at chart table and in cabins
- Single outlets in the heads
- Two double outlets in the galley.

06.02 Earthing system

00 General

The AC system is using the keel as underwater earthing point.

01 Lightning protection system

Mast and shrouds are electrically connected to keel.

06.04 DC-system

00 General

2-pole 24 V insulated return DC-system for lighting, blowers and pumps. Wires are sized to minimise voltage drop. A voltage stabilizer for instruments with two 12 V 10 A batteries is installed. The engine and genset each have their own AGM starting batteries 50 Ah 12 V. Batteries located in ventilated GRP boxes.

01 Service batteries

The service battery bank is 24 V 522Ah / 5 h rating (626 Ah / 20 rating) and consists of 12 single cells of 2 V each. The model is Energys 6 PzV 522. The batteries are of Energys maintenance-free gel type.

The bank is for the lights, blowers, pumps and electronics. The battery bank is located in a ventilated GRP box in the fwd cabin.

02 Alternator

One 24 V 110 A Mastervolt alternator with 3-step charge characteristics on the main engine for service battery bank.

05 Outlets DC

12 V DC outlets installed one at chart table, one on mast and one in cockpit.

06.05 Plumbing and monitoring system

00 General

Alarms are presented at main switchboard in galley.

- Black water tank levels high
- Black water tank levels full
- Water in fuel separators
- Bilge pump run, saloon, forepeak and lazarette

04 Black water system

Black water tanks are equipped with $\frac{3}{4}$ and full tank alarms in galley. Tank level switches made by Sealand.

05 Drainage system

The bilge pump in saloon can be operated in manual or automatic mode. The automatic mode is controlled by a GEMS LS-270 level switch next to the pump.

06 LPG system

The gas supply to the gas stove is operated by a switch near by the stove, which controls a solenoid valve at the gas bottle.

08 Water metering

Water tank levels are shown at main switchboard in galley. Tank level sensors are made by VDO.

09 Fuel metering

The fuel tanks levels are shown at the main switchboard in the galley. Tank level sensors are made by VDO.

10 Monitoring system

In the galley on the main switchboard functions are indicated of the following:

- Black water pumps run
- Water pressure pumps run

- Engine ventilation run

Level metering:

- Water tanks
- Fuel tanks

06.06 Engine and generator DC

01 Starting batteries

There is a 12 V battery for the main engine with a capacity of 50Ah/20h, model Optima RedTop.

The starting batteries are of maintenance free AGM type.

03 Alternator

One 12 V 80 A alternator on main engine for engine starter battery.

06.07 Instrument power supply

00 General

The radio and instrument power supply is by service battery. There is a voltage stabilizing battery for the navigation instruments and communication system.

06.08 Ventilation and heaters

02 Galley fan system

Galley fan is controlled with an on/off switch in the galley.

03 Engine room

Thermostat controlled fan.

04 Battery boxes

Thermostat controlled fan.

06.09 Electrical panels

01 AC and DC panels

The galley is provided with a clear anodized main switchboard. The AC and DC voltages and consumptions of the yacht's main systems can be monitored on this panel. The panel is also equipped with indication for alarms, see 06.05.10.

- Switches of trip-free circuit type
- AC system monitor displaying V, A and frequency
- Battery monitor of digital type displaying V, A and Ah
- Switches for interior and navigation lights
- Fuel tank level gauge with selector switch
- Water tank level gauge with selector switch
- In separate locker near main switchboard:
 - Main switch and fuses for engine and generator DC
 - Earth fault test panel
- Service main switch box located in owner's cabin
- Main switch and fuses for AC

03 Cockpit panels

- Engine control, see 04.08
- Navigation light control

Main engine controls as per section 4.7. There are switches for mast and boom lights, dimmer for compass lights.

06.10 Domestic appliances

00 General

Selected appliances are of high class and well known brands.

09 Refrigerator

There is battery driven refrigeration unit with separate thermostat control. See section 03.08.08.

10 Freezer

There is a battery driven freezer unit with dual function thermostat, enabling freezer to also be used as a refrigerator. See section 03.08.08.

12 Stove

There is a stainless steel three-burner gas stove Force 10 with oven and grill, gimbaled and provided with fiddles. There is flame failure protection on burners. Manual gas shut-off cock adjacent to stove. Remote controlled shut-off and leak detector near gas bottle with control switch. The gas installation is according to ISO 10239.

06.11 Lights

00 General

Every cabin has switches for lighting in cabins and toilets. All spotlights are of LED-type unless otherwise stated.

02 Over head lights

- Frensch F-19 LED lights inboard in all cabins and toilets
- Frensch F-7 LED spotlights outboard in all cabins and toilets

03 Reading and table lights

- Hobart LED with switch, chrome 10-30VDC reading lights above double berths
- Frensch F-19 LED lights above vanity desk
- Frensch F-19 LED lights above saloon table
- Frensch F-4 LED light with 300 mm long arm at chart table

05 Locker lights

An automatic light is installed in all hanging lockers.

08 Navigation lights on deck

- Stern light LED Lopolight
- Port side light LED Lopolight
- Starboard side light LED Lopolight
- Navigation light switch is located on cockpit panel

09 Navigation lights on mast

- Steaming light on forward side of mast, controlled from cockpit panel
- Anchor light at top of mast, controlled from cockpit panel
- Tricolour light at top of mast, controlled from cockpit panel

10 Spreader lights

- Two spreader lights, facing down on 1st spreader, controlled from cockpit panel

11 Windex lights

- Windex light at top of mast, controlled from cockpit panel

12 Boom lights

- One boom light controlled from cockpit panel

99 Other

- Compass light with dimmer, controlled from cockpit panel
- LED light in engine room
- Red night light in overhead in galley, Frensch F-19 LED

07 ELECTRONICS

00 General

Final specification will depend on the availability at the time of purchase and may change accordingly.

07.01 Compasses, clocks and barometers

01 Magnetic compasses

There is one Silva 125FT magnetic steering compass at each steering console.

07.02 Sailing instruments

00 General

There is a Brookes & Gatehouse Triton SDW system with, masthead unit, speed/water temperature sensor and depth sensor.

02 Digital displays

Two B&G Triton Graphic 4,1" displays, mounted close to each pedestal.

04 Sensors

- One combined depth/paddle wheel speed sensor, located on starboard side in front of keel, housing in plastic
- Wind sensor at mast head

07.03 Navigation systems

00 General

There is an optional upgrade with a B&G Vulcan 7" chart plotting system connected to the Triton system and integrated into the aft face of the cockpit table.

01 GPS

A B&G ZG100 10Hz GPS antenna comes with the optional plotter and is used for:

- B&G sailing instruments
- Optional B&G chart plotter
- Optional B&G autopilot system

03 Chart systems

Charts are not included. See section 07.05.02

07.04 Communication systems

01 VHF Radio

VHF radio B&G V90 with two wired handsets, one at the navigation station and one at the steering console, with intercom possibility between the two. Radio includes built in AIS receiver.

07.05 Entertainment systems

01 Audio system

System plays, FM radio and music stored on an iPod/iPhone.

Marine stereo system Fusion MS-RA205 positioned in saloon connected to one pair of B&W CCM362 speakers in saloon ceiling.

02 Video system (Optional)

07.06 Autopilot system (optional)

01 Main unit

Optional Triton Pilot Add on with numeric pilot controller installed in starboard coaming.

03 Hydraulic cylinders

Optional Autopilot is driving the steering quadrant with a B&G Size 3 hydraulic ram.

07.07 Aerials

01 Navigation antennas

The optional B&G ZG100 GPS antenna is mounted on the port lower pushpit rail.

02 Communication antenna

The B&G V90 VHF is connected to the AC-Marine CX4 VHF antenna at masthead.

07.10 Safety systems

01 Foghorn

There is a Marco EW3 24 V foghorn.

08 RIG

00 General

Spars are built by Seldén Mast of extruded aluminium, silver anodized with measurement bands in black. There is a double spreader 15/16 fractional rig, with discontinuous shrouds and 20 degrees swept aluminium spreaders on a wide shroud base.

IM = 21.93 m

J = 5.95 m

P = 20.08 m

E = 6.70 m

08.01 Mast

Oval section with external stemball tangs and tapered top section of the mast. Preparations for full-battened mainsail, with Seldén MDS system, (battcars to be supplied by sailmaker), all halyard exits smoothed for rope halyards equipped with stainless steel chef guards. High load sheaves for:

- Main halyard with termination for 2:1 halyard
- Two side by side jib halyards at hounds
- Two masthead over/under spinnaker halyards with anti-chafe gear

Internal wiring secured to mast. Battery ventilation connections to be provided near mast lower end. Neoprene mast boot with Dacron cover over deck partners, four stainless steel folding mast steps.

08.02 Boom

Of aluminium oval section silver anodized, for a loose footed mainsail, with clew strop (to be supplied by sailmaker). Boom to include:

- Sheaves at outboard end for two single line reefs led to deck winches.
- Sheave for outhaul powered by Internal hydraulic cylinder
- Provisions and blocks for the German mainsheet system

- Preparation for three leg lazy jack system.
- One boom light
- Port and starboard mounted folding padeyes for preventer at outboard end

08.03 Standing rigging

Nitronic 50 rod rigging. Trough deck Seldén TD400 manual furler for jib, control line led under deck to cockpit.

08.04 Running rigging

Ropes of Dyneema. Main halyard with screw shackle, headsail halyards and sheets with snap shackles. Internal halyards.

Description	Quantity	Material	Dimension
Main sheet	One	Dyneema	12 mm
Jib sheets	Two	Dyneema	14 mm
Gennaker sheets	Two	Dyneema	12 mm
Gennaker halyards	Two	Dyneema	12 mm
Jib halyards	Two	Dyneema	14 mm
Mainsail halyard 1:1	One	Dyneema	14 mm
Outhaul	One	Dyneema	14 mm
Single line reefs	Two	Dyneema	12 mm

08.06 Rig hydraulics

Anodized cylinders powered by triple system control panel in cockpit, to include:

- Boomvang
- Outhaul cylinder
- Two backstay cylinders

09 EQUIPMENT

00 General

Owner's Manual in English is provided in with directions for use and maintenance, drawings and diagrams for main systems and handbooks for machinery and components.

09.02 Anchoring and mooring

- One Stainless steel 25 kg anchor
- 50 m 10 mm Grade 40 chain spliced to 50 m 16 mm plaited nylon anchor line
- One boat hook

09.03 Sailing gear

Four winch handles, two 10" double grip and two 10" single grip.

01 Sails

To be provided by Customer. Builder and Spar manufacturer to provide sail maker with measurements needed, to notify sail maker of mast stepping schedule and to assist sail maker with installation and testing of sails.

09.04 Firefighting equipment

- Fixed automatic fire extinguisher in engine room with manual release handle at companionway
- Three portable extinguishers; one in saloon, one in owner's cabin and one on deck
- Fire blanket in galley

Please note: At no time should gasoline be stowed in the lazarette or anywhere inside the boat.

09.05 Safety equipment

- Safety lines for deck
- Safety belts for galley and navigation station

09.06 Spare parts

- Basic spare parts kit for engine
- Basic plumbing spares
- Basic electric spares

09.07 Tools

- Basic engine tool kits

09.99 Other

- One half model of the hull
- One handle for opening deck hatches
- Two suction lifters for floorboards
- Sounding rods for fuel and water tanks
- One Bosun's chair
- Flag pole 134 cm
- Stainless steel boarding ladder
- Launching and rigging in Pietarsaari

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