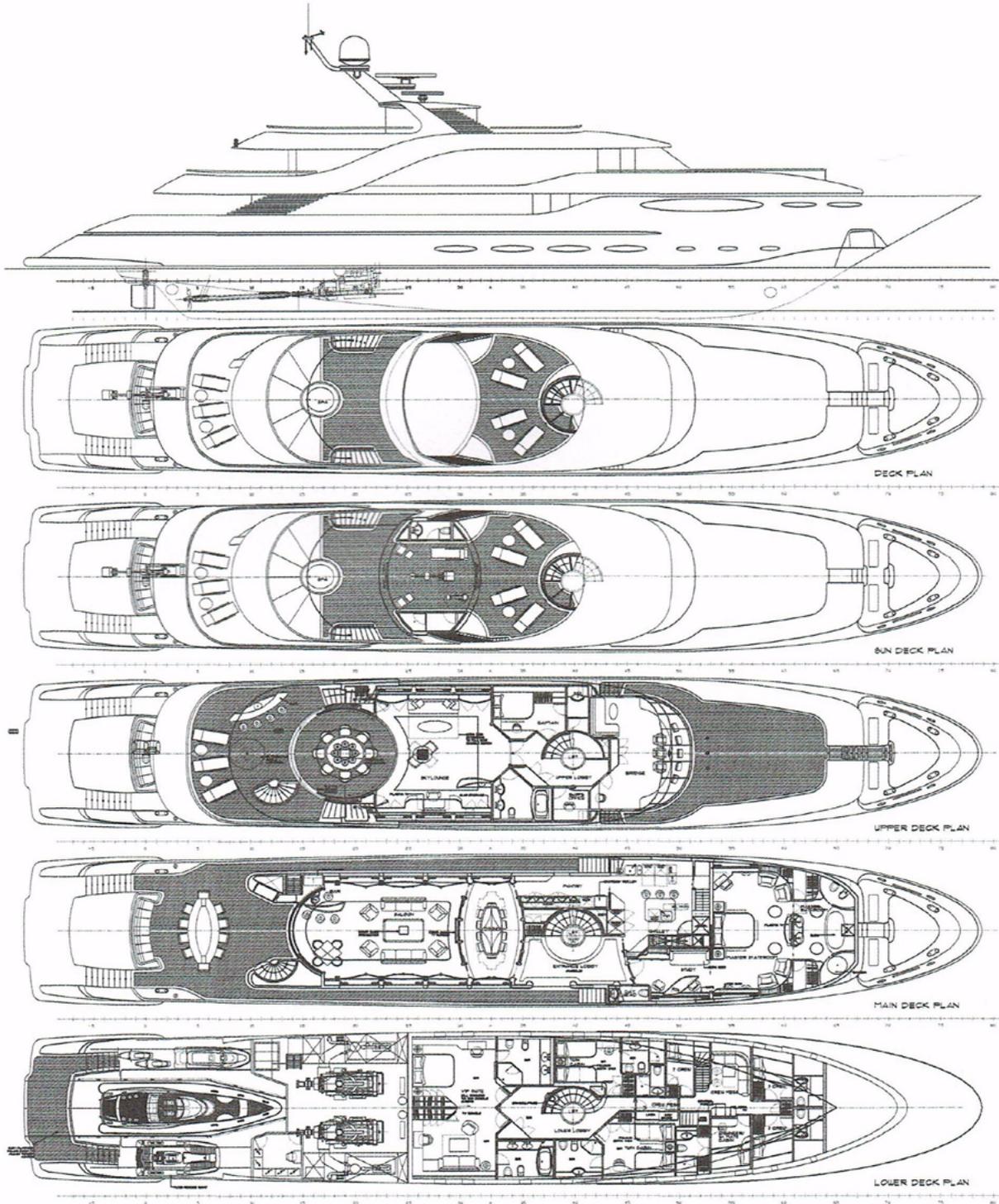


Provisional
Technical Specification



Preliminary technical specification for the construction of a 50.00 meter luxury “twin screw” Diesel-propulsion motor yacht

General Arrangement: 07-2-2018



MAIN PARTICULARS & SHORT DESCRIPTION

SHORT DESCRIPTION

This specification describes an all welded steel & aluminium built sea-going luxury yacht.
The Vessel will be build in accordance with G.A. Plan.

A short description of the vessel;

The Motor Yacht illustrated in the general arrangements enclosed to the present specification is a luxury "pleasure yacht" with an overall length of 50 mtrs.

The hull will be made of steel while the superstructure will be made of aluminium, according to the project philosophy.

According this philosophy the yacht will be build to achieve an extremely low level of noise and vibrations, in order to increase the comfort and quality.

The interiors, studied to respect the ergonomic principles, will be designed, according the appointed architect and taste of the client, to obtain the maximum comfort at sea.

The thermo insulation and the air conditioning system, as specified will be conceived to adapt the yacht to a navigation in the Mediterranean and tropical area (world wide operation).

The yacht to be built in accordance with the MCA ruling for unlimited navigation.

PRINCIPAL DIMENSIONS

Length over all	appr.	50.00	m.
Length b.p.p.	appr.	37.35	m.
Beam mld.	appr.	8.60	m.
Depth main deck	appr.	4.50	m.
Draught design max.	appr.	2.45	m.
Speed max. (100% MCR at draught 2.45 m.)	appr.	16.0	knots
Range (at speed 12 knots)	min.	4.500	nm

CAPACITIES

Fuel oil	appr.	72 m ³
Fresh water	appr.	15 m ³

FEATURES

Engines features	2 x Caterpillar C32 1800rpm / 2 x abt. 1050 hp
Reduction gears	2 x ZF W4400
Water makers	2 x Hem – l/day or equal
Propellers	2 x 5 fixed blades
Main generators power Beta Marine	2 x 110 kW/50 Hz
Guests places	10+ Owner's cabin
Crew places	9 + Captain

The hull is made of "Grade A" steel.

The aluminium superstructure on the main deck and above is made of "ALMg4.5MN".

The accommodation is provided with air conditioning and heating.

Stainless steel will be AISI 316L, passivated where necessary.

All wood will be of 1st class quality, sound, dry and free of defects with a moisture content not exceeding 15%. Deck planks will be quarter sawn and of uniform colour and straight grain.

All glues used will be suitable for tropical conditions.

DEFINITIONS

This specification is describing the construction and the outfitting of the above mentioned yacht and following words and/or expressions used herein will have the meaning as defined hereinafter.

(1) "VESSEL"	The yacht as mentioned in 001 above
(2) "G.A. PLAN"	General Arrangement Plan indicated in 001 above
(3) "OWNER"	The corporate body or legal person who has the ownership of the Vessel.
(4) "INSPECTION"	Persons, appointed by the Owner, who are charged with the surveillance of the Vessel
(5) "BUILDERS STANDARDS"	Way of construction and/or outfitting as customarily on Builder's yards.
(6) "OR EQUAL"	Substitution of equivalent equipment or different manufactures as regulated by availability
(7) "ER"	Engine room compartment
(8) "PS"	Portside
(9) "SB"	Starboard
(10) "CLASS"	Classification Society

WORKMANSHIP AND QUALITY OF MATERIALS AND FITTINGS

The workmanship on the hull and fittings throughout will be according to Builders Standards, In line with Hull superstructure document provided care being taken to ensure fair lines, smooth surfaces and neat welding.

All in accordance with standards of the relevant Classification Society.

Makes and types of machinery and equipment are mentioned in this Specification for the sole purpose of describing the extent of delivery and the quality of the Vessel.

The Owner.

All materials will be new and of marine quality and to best yacht standards.

DELIVERY

The Vessel will be delivered ex-yard to the Owner with almost empty storage tanks, complete with equipment, tools and other items described in this Specification.

Identical components and equipment mentioned more than once in this Specification will only be delivered once.

Crockery, pottery and other galley utensils, small nautical instruments, sea charts and nautical books, tools, extra spare parts and other loose equipment are Owner's delivery.

Fuel- and lubricating oil necessary to perform the tests and trials here after are for account of the Builder. Fuel remaining in tanks to be paid for by owner at current bunker price as obtained by shipyard.

Components and equipment not described in this Specification and not specifically required by the Class are not Builder's delivery.

OWNER'S SUPPLY

In the event the Owner is supplying components, equipment and/or any other materials to be incorporated in the Vessel, the additional work for bringing on board and/or for installation on board the Vessel is not included in this Specification.

The Owner will be responsible for his own supplies, as mentioned, at anytime.

In the event Owner's supplied components are already fixed in this specification the builder is given a credit, according shipyards standard, for that components by the Owner.

STATUTORY DOCUMENTS AT DELIVERY

All necessary certificates and official documents as required will be handed over to the Owner upon delivery of the vessel.

These will include;

- Certificate for hull construction.
- Tonnage certificate for registry
- Builders certificate

CLASSIFICATION GENERAL

The requirements and regulations described below are those who are valid on the date the keel of the Vessel was laid.

CLASSIFICATION / SAILING AREA

The Motor Yacht will be designed according to the regulations of the B.V. OR Lloyds

The Motor Yacht will be built according the class reliance characteristic 100-A5.

The yacht to be built in accordance with the MCA ruling, and for world wide area.

A certificate will be required for the hull only.

NOISE AND VIBRATION

The yacht will be designed and built in order to minimise noise and vibration, all cabin bulkheads will be flexible mounted, all piping will be mounted in flexible pipe carriers, the continuity of piping from the engine room will be interrupted by flexible connectors to avoid noise transmission.

Care will be taken to provide continuity of beds of the main engines and reverse reduction boxes.

All exhausts will be fully silenced and mounted from the hull structure or engine beds with no connections to the deck.

All fans will be fitted with silencers and have adequately dimensioned grills and ducts.

There will be no through connection by mechanical fasteners in any bulkheads or divisions.

Special attention to be given to silencing vacuum waste lines.

The builder will employ a specialist consultancy to make a computer-modelled simulation of noise levels and will present a sound and vibration damping plan to owners.

In the following two conditions the noise levels are expected not to exceed those in the target table below.

Condition 1 at anchor with one generator running, primary air and fan coils operating at medium speed, air conditioning on, all bathroom and galley extractor fans running, at anchor stabilisation running, radars and electronics operating.

Condition 2 is underway at 16 knots cruising speed with all the above equipment running.

<u>Zone</u>	<u>Condition 1</u> max dB(A)	<u>Condition 2</u> max dB(A)
Crew cabins	52	55
Crew mess	52	60
Main galley	58	62
Guest cabins	48	55
Owners suite	48	55
Dining room	48	55
Main salon	48	58
Upper salon	48	55
Owners study	48	55
Captains cabin	48	55
Pilot house	48	58
Control room	70	75
Exterior main deck aft *	55	75
Exterior upper deck aft *	55	70
Sun deck middle *	55	65

* excl. wind and water noise

TRIALS AND QUALITY CONTROL

TESTS

During the construction, all the materials, systems, and equipment will be duly tested according the general rules of the society.

- aft board equipment tests
- inclining test
- electrical insulation trials
- mooring trials
- engines/generators and steering devices trials
- fire-fighting equipment and bilge system trials
- navigation lights trial
- yacht equipment inspection
- doors/shutters/port lights watertight inspection

Tanks are pressure tested according to the rules of the Classification Society.

The main engine is tested at the manufacturer's workshop during several hours.

All trials and tests will be performed in the presence of the owners representative and the classification society where required.

Dock and sea trials test program will be submitted to owner and classification society two weeks before starting trials.

INCLINING TEST

Before commencing with sea trials, with the Vessel's tanks still empty, an inclining test or light weight check will be held in the presence of an Owner's representative and/or the Shipyard.

This will be held in the presence of the MCA surveyor and will be in accordance with their rules and under their supervision, a stability book to meet MCA requirements and approved by MCA will be produced.

SEA TRIALS & OTHER TRIALS

The sea trial will be carried out at the presence of "Class Surveyors" and will be consist of:

- main engines
- steering devices
- revolution and speed
- astern
- stabilizers
- bow thruster
- air conditioning system
- anchoring and windlasses
- generators
- fire fighting and bilge system
- magnetic compass revisions with respective
- swinging's for compass deviation
- log calibration
- radar
- radio communications
- interphone

All work and equipment of the Vessel will be tested in accordance with Builder's Standards and according to Class requirements.

The trial speed will be measured at calm water conditions (wind speed max. 2 BF) and in sufficient deep water, at a draught of about 2.10 meter and an output of the main engines of about 2 x 746 kW which is 100% MCR.

Shipyard Sea trials will be performed in order for the yard to ascertain correct functioning of all equipment before acceptance trials. Acceptance sea trials will include at least 4 hours navigating time.

They will include;

Max speed measured by DGPS, speed at 85% max power, consumption by calibrated fuel test tank at max speed, at 85% power at 12 knots, a standard pattern of manoeuvring trials, single engine operation, at least four hours cruising at 85% power, sound and vibration data collection and all standard trials required by classification society. Noise and vibration trials will be conducted by an independent specialist at shipyards expense, specialist to be nominated by yard.

All sea trials costs to be born by builder.

N.D. TESTING AND/OR X-RAY EXAMINATION

Non destructive testing and/or X-ray examination of welds of hull- and deck seams, engine seatings, winch seatings, rudders, etc. will be carried out at locations indicated by Class.

DOCUMENTATION

Instruction manuals for relevant machinery, equipment and installations will be delivered in upon delivery of the Vessel (format A4 / catalogued).

Three stability information booklets for various loading conditions approved by Class will be delivered as soon as possible after delivery of the Vessel.

Stability book to meet MCA requirements.

Tank sounding tables will be delivered in 3-fold.

All documentation will be in the English language and all drawings will be in the English language, whereas for dimensions, weights, etc. the metric system will be used.

Manufacturers World wide warranties will be provided for all equipment including domestic appliances and entertainment systems of shipyard supply.

Suppliers list, showing names and contact addresses, fax and phone numbers for all suppliers of equipment, outfitting and machinery.

Manufacturers shop test reports and manufacturers commissioning reports of main engines and generators.

DRAWINGS

At delivery the Motor Yacht will be provided with the following drawings, corrected to be "as built":

- General Arrangements
- "Stability Book"
- gen. constr. plan
- main section
- steering equipment
- sounding and air vents
- pipeline systems
- electrical installation
- Shell plating.
- Rudder and steering arrangement
- Superstructure construction
- Capacity plan.
- Arrangement of tanks, bilges, manholes and docking plugs.
- Bilge and fire fighting system
- Safety plan approved by MCA
- Seawater cooling system
- Sea chests and through hulls.
- Hot and cold water system
- Compressed air system
- Stabilisers and associated hydraulic system
- Sanitary system
- Mooring arrangements
- Engine room arrangement
- Engine exhaust systems
- Shafting arrangements
- Electronic wiring diagram
- Arrangement of antennas
- Insulation plan
- Ventilation plan.
- Air conditioning system
- Deck head plan showing removal sequence of panels.
- Docking plan

HULL AND SUPERSTRUCTURE

GENERAL

The construction will be a transverse & longitudinal structure according to all the Rules and Regulations of the B.V./Lloyds

All the drawings regarding the hull/superstructure and their reinforcements will be previously approved by B.V./Lloyds

HULL

The hull has a round chine form with a transom stern and a tapered bow with an open foredeck and extended main deck construction as per G.A. Plan.

The hull is sub-divided into watertight and / or oil tight compartments as per G.A. Plan.

The hull plating, completely welded, will be mounted according the structural drawings approved by the Classification Register.

SCANTLINGS

The scantlings of the hull and the superstructure are in accordance with the relevant rules of the Class. The hull is strengthened by a combined longitudinal/ transverse frame system.

The flats and floors of the extreme areas of each tank, placed in locally concentrated stress areas, will have the correct thickness to satisfy the structural calculations of the Shipyard standard and the Classification Register Regulations.

TANKS

The major tanks for fuel, lub. oil, potable water, etc., are steel constructed tanks as an integral part of the hull construction.

MAIN ENGINE SEATINGS

The basics are integrating part of the hull, including top girder.

The girders connected with the foundations of the main engines and with the ones of the other bed plates bases will be dimensioned as per Register Rules.

HULL DOUBLINGS

The hull doublings will be used to face the risk of local extra stresses, and they will be "inserted type", put equal to the hull surface.

They will be positioned in connection with the shaft brackets of the stern tubes and of the appendices.

STEEL DECKS

The steel decks will be fully laid and continuous on the whole boat length and beam. All the openings will be reduced to the minimum and will never present live angles. They will be flat arched to eliminate any shearing damages stress.

SUPERSTRUCTURE SCUPPERS

All the sea open superstructures decks will be drained in the most reception areas by scuppers running inside the hull end discharging outboard, in the boot-topping area and in the decks passageways. Special consideration will be given to the garage drainage, in order to be able to wash the tender inside the garage.

EXTERNAL DECKS

All the sea open decks , , will be covered with teak wood with a minimum average thickness of 22 mm The teak planks or similar will be glued on the decks through bi-component glue , upon primer treatment of steel, aluminium alloy and teak.

The plating below deck sheathing will be treated with a full anti corrosion cycle of epoxy paint and faired with a filling compound to avoid water lying below decks, before the decks are glued.

There will be no mechanical through fasteners in any of the deck planking.

The covering boards will be fitted without a steel upstand where necessary.

The margin planks against the aluminium structure will be thicker and tapered to the deck to prevent water lying against the structure.

Planks will be of first quality teak straight grained and quarter sawn free of defects, knots or cracks.

Planks will be laid with a centre line king plank (of at least 150 mm width) and swept to the turn of the superstructure, they will be bordered around all deck hatches and edges with margin boards at least twice the width of the planks.

Planks will nib into the king plank on the fore deck and covering boards as necessary, with rounded nibs.

Plank length to be a minimum of 4 meters but generally as long as possible all butts will be staggered.

The planks will have 4mm wide and 10mm deep seams between them and these will be neatly and accurately made then filled with a high quality (Sika or similar) caulking compound using bond breaker tape as necessary.

When finished seams will be flush (or slightly concave below) the level of the finished planks.

All air inclusions will be cut out and repaired once decks are finally cleaned off.

Decks will present a perfectly clean and smooth surface when finished and the minimum finished thickness will be 22mm

118 CHAIN LOCKERS

The internal space of the chain lockers will be centrally separated by a bulkhead of 6 mm thickness to avoid the transfer of the chain from starboard to port side.

The internal hull structures will be protected by wooden battens fixed on the internal face of the frames, The lockers floor will have a flooring made of perforated and hot-dip galvanized plate, detachable, to effect the periodical cleaning.

The chain pipes of the lockers will be made of stainless steel, duly reinforced and well mouthed to make the chain lockers setting easier, the final part of the chain cables will be fixed to appropriate eyebolts with approved quick release shackles on the bottom of the lockers cables well.

SUPERSTRUCTURE

DECKHOUSE

The deckhouse is made out of aluminium and has a form and lay-out according to the General Arrangement Plan. For the welding connection to the hull will be used a bimetal joint type "Triclad".
Fairness of aluminium, before filling, fairing and painting to be within 5mm when bridging any three frames with a straight edge or stiff batten.

WHEELHOUSE

The wheelhouse is made of aluminium and has a form and lay-out according to the General Arrangement Plan.

HATCHES AND DOORS

ENTRANCE HATCHES

Entrance and emergency escape hatches are provided as shown on the General Arrangement Plan. Special attention will be given to the safety.

MANHOLES

All tanks and void spaces are accessible through a manhole in one of the respective bulkheads or in the tanktop.

Tanks with a length of less than 3.0 metres are fitted with one manhole.

Tanks with a length in excess of 3.0 metres are fitted with two manholes.

DOORS

All the openings on the superstructure accessing the main deck will be provided with watertight doors.

Two watertight doors will connect the garage area with the Engine Room.

The garage will have a small back door; if approved by MCA.

All watertight doors to have indication in the pilot house that they are closed and locked on the dogs.

All water tight doors to be used by passengers to have a simple first stage latch for use in port.

The garage door is electric hydraulic lifting up and will be designed by the yard.

WATERTIGHT DOORS

The Vessel is provided with watertight doors, where required and as per G.A. Plan.

WINDOWS & PORT LIGHTS

The ship has windows and portholes according to the General Arrangement Plan.

Portholes to be non-opening and to be provided with removable deadlights stowed in convenient positions in the applicable cabin.

All the sea open superstructure windows will be built with welded aluminium frame with coloured slave-in-proof glass.

The number of windows and port lights and their dimensions can be found in the enclosed General Arrangements.

The single glasses will be "SECURIT" type with colour chosen by the Buyer.

The pilot bridge front glasses will be equipped with three windscreen-wipers with parallel arms, fresh water washing, intermittent wipe control and two speeds. Internal electrical demisting will be provided separate to the air conditioning.

Opening windows will be fitted with drip trays below them with drainage to the main scuppers, all made in corrosion proof materials.

The sliding doors will also be installed with electrical control.

Sliding doors will be fitted with drip trays with drainage to the main scuppers, all made in corrosion proof materials.

Sliding doors will be weather proof.

Windows to have storm covers according MCA rules.

Storm covers to be marked to show the position of installation and to have a built in stowage space in the vessel.

WHEELHOUSE WINDOWS

The wheelhouse has windows all around.

The thickness of the single glass is according to Class. The door windows are to be half open type or equal.

DECKHOUSE WINDOWS

The deckhouse is fitted with windows according to the G.A. Plan.

Flange and cover constructed of aluminium.

Glass thickness according to Class.

Fixed windows to be fitted by an approved adhesive system, or with frames without mixed metal fastenings, approved non metallic fastenings may be used.

MASTS

TOP MAST

The top mast made of aluminium is located above the sun deck as indicated at the G.A. Plan.

The mast is fitted with supports for aerials, lights, etc.

An access ladder will be provided

MISCELLANEOUS

An area will be identified in the garage and a cold garbage storage area will be built

SHIP'S NAME

The ship's name will be written:

- aft over the Port Registration
- asides (on the high part of the superstructure)

FLOOR PLATING

The ER is (where necessary) provided with aluminium floor plates with anti-skid profile fitted on angle bars. At positions of machinery, valves, etc. located below the floor plate's removable plating is provided. Guards will be fitted in the way of all revolving machinery and to protect electrical connections. The Engine room will be fitted with polished stainless steel handrails. All pumps will be mounted over light alloy drip trays.

NAME PLATES

In general brass and/or resopal nameplates to be fitted to all valves throughout the vessel. All piping to be marked with international code colours showing liquid or gas carried and with flow direction arrows. All nameplates are in the English language.

CONTROL ROOM

At Starboard aft in the Engine Room a control Room will be situated. The main switch board will be operated from this position. A special window will be installed to have a visible control to the Engine Room.

BULWARK

The bulwark will be of closed type all around the vessel. The bulwark top rail will be covered with teak. The top rail bar itself will be fitted in stainless steel.

PROPULSION AND MANOEUVRING SYSTEM

GENERAL

The design and lay-out of the ER installation is in accordance with the rules and regulations of the Class for the notation as per 031.

MAIN ENGINES

There will be installed 2 CATERPILLARS 3508 OR 32C 1800 rpm engines with electronic control and high performance calibration.

Painted white by the manufacturers and with the Caterpillar deluxe décor finish.

Engines will be covered and protected at all times during the build and will be retouches to perfect condition upon delivery.

The engines will have the following characteristics:

Model engines	3508 B DITA or 32C 1800rpm to be confirmed
Continuative power	1000Hp (abt. 746 kW) to 1600 rpm
Number of cylinders	8 V /12 of 65°
Cycle	Diesel 4 stroke with direct injection
Suction	Turbo supercharged and water circulation after cooled
Cooling	with fresh water in closed circuit, through shell-and- tube exchange

SHAFTING AND MANOEUVRING SYSTEM

Transmission:

An elastic joint "Rubber Design or Centa" connects the reduction gear type ZF W4400, or equal, to the shafts.

Shafting:

There will be placed two steel shafts totally inspected by the Classification Society.
Oil filled shaft tubes and bearings.

Calculation of the torsional vibrations:

The Shipyard will provide the engines manufacturer with all the necessary data to effect the calculations of the torsional vibrations (TVC).

Rudders and there machinery:

The motor yacht will be equipped with 2 balance rudders which will be moved by an hydraulic system dimensioned according to the Classification Society with an outreach angle of abt. 2 x 45 °.

The equipment will be composed of a double hydraulic cylinder an a sliding support with relative piping and levers.

The system will be designed to have 2 different parts: the main wheelhouse and the emergency one.

There will be two hydraulic power packs and the system will be organised to run from either power pack with the change over effected in the pilothouse.

Rudder power supply to have an emergency back up.

In the garage will be an emergency steering system by direct manual hydraulic hand wheel to the rudder pistons, a rudder angle indicator and direct communication to the pilothouse will be provided at this emergency steering position.

PROPELLERS

There will be supplied two 5 fixed blade propellers, dimensioned as per designers calculations. Fully dynamically and statically balanced of first class material (NIBRAL or equivalent) to be made by approved manufacturer.

ZERO SPEED STABILIZATION EQUIPMENT

There will be installed a double set oil-dynamics zero speed stabilization equipment, type “ NK Naiadkoop “ , from Koopnautic.

Its dimensions will be made by the supplier in collaboration with the Shipyard Design Department..

BOW THRUSTERS

In the forward area , and in the aft peak area, there will be installed an electrical transmission Bow Thruster system by Koopnautic, type of about 100 KW power each, or to the dimensions given by the equipment provider.

RUDDERS

The rudders are of watertight streamlined double plate type, Brake split rudder operated together or separate fabricated of mild steel and fitted internally with vertical and horizontal plate frames.

The rudderstock is made according to the Class.

A hand grease gun for greasing the rudder trunk will be installed.

PRIMARY SHIP SYSTEMS

DIESEL OIL SYSTEM

- Diesel oil feed:** The main engines and the generators will have their intake directly from the service tanks.
There will be double filters, type "RACOR", on each machine suction with standard RACOR change over valves and water content alarms to the pilot house.
- Tanks:** The yacht will have a total fuel capacity of about 70.000 /80000litres max., divided into 6 tanks inside the double bottom, divided by transversal and longitudinal bulkheads, and into 2 service tanks, placed inside the engine room, with a capacity of about 1.500 litres each.
- Air vents:** Each tank will have a pipe vent with stainless steel protected opening on deck.
- Manholes:** They will be placed in the upper part of the tanks, to allow the access to any part of each double bottom.
- Equipment:** Capacity levels will be installed in every tank and they will be calibrated during the first tanks filling.
There will also be the possibility of using a sounding line in each tank in case of instrument average.
Each tank will be fitted with a high-level alarm operating independently from the capacity level.
Service tanks will also be fitted with approved sight gauges.
- D.O. fillings:** On the port and starboard side of the upper deck there will be placed a central D.O. filling.
- Service tanks:** The service tanks, of structural type, placed inside the engine room will have approved visual levels with repetition in the wheelhouse.
Separate low level alarms will be fitted to the service tanks.
- D.O. Overspill tank:** A special system will be designed and installed for monitoring fuel whilst bunkering to stop any accidental fuel spillage.
Tank breathers to be connected to a overfill line allowing fuel from any overfilled tank to run to the next tank with available space.
A fuelling station for diesel tenders will be provided taking fuel from the day tanks via a retractable hose and standard fuelling nozzle.
- Piping:** All fuel piping will be of cupro-nickel, only the shortest possible flexible connections will be used to the engines, all flexible connections will be certified fire proof.

D.O. TRANSFER/TREATMENT SYSTEM

One main electric pump and one back up will transfer the fuel off.
The pump will have a capacity of approx 4 mc/h with 10 m head, and 1 hand pump of 60 ltr/min.
The pump will be connected to distribution manifold interacting the various tanks and
A mechanical flow meter for counting litres transferred will be fitted.
deposits among them.

The Motor Yacht will be supplied with an ALFA LAVAL, or equal, by passable purifier (Gas Oil Separator) and useable with "tank to tank" system.
One emergency pump will be installed.

LUBRICATION SYSTEM

The main engines and the generator sets will have their own lubrication system with all the necessary pumps, refrigerants, thermostats and filters.

One tank for dirty oil with electric transfer pump will be placed inside the engine room.

Two tanks for clean oil will be provided in the engine room.

The tanks will have a total capacity sufficient to contain one oil change for all the machinery, plus 15%.

The sumps of the engines and generators will be hose connected to the oil drainage system by means of a quick release connection.

The oil fill will be by a length of suitable hose.

Each lubrication tank will be fitted with a capacity gauge as well as manual sounding system.

Provision will be made to fill the fresh oil tank from deck and to pump the used oil tank to an outlet on deck near the stern.

All tanks to have a stripping system 24V at the lowest point

GREY & BLACKWATER

The system will be designed by Vetus, with anti-pollution system, and carbon filters.

The grey water will drain by gravity system to the grey water tank, this will be provided with a capacity indicator in the engine control room and with a separate high-level alarm, set to 75% full, both in the control room and pilothouse.

The tank will have an endless screw type pump for emptying it to well below the water line of the vessel and this pump will be manual start activated either locally or from the control room but automatic stop at 10% of level.

All piping into the tank will be fitted with deep goosenecks to prevent the return of odours.

A fresh water connection point will be provided near the tank so wash down and cleaning of the tank can be conveniently performed.

There will be cross over piping so the black water discharge pump can be used in emergency also to empty this tank.

The black water discharges will be connected to a depression "Evac" system, or equal.

The toilet will be fresh water flush.

The black water treatment system will be of high quality type "Hamann" with U.S. Coast Guard approval.

A vacuum pump with crusher will lead the water from the origin points to the black water tank and from here the treatment system will draw off and treat as necessary discharging overboard below the water line of the vessel.

The treatment system will have its own level sensors in the tank and will be provided with indicators in the engine control room to show it is in Standby, Operation, Fault or Low chlorine level.

The chlorine tank for the treatment system will be conveniently located for refilling and provided with a corrosion proof drip tray.

The black water tank will be equipped with a capacity indicator in the control room and a separate high level alarm, the high level alarm to be arranged to repeat in the control room and the pilothouse.

There should be a further over-level alarm which shuts down the vacuum pumps.

At various points through the vessel there will be vacuum lift tanks to take grey water from the places which are too low to drain by gravity to the grey water tank, all the lower deck air conditioning fan coil drains should go to such a tank (or tanks), all according the design of Vetus.

The vacuum pumps should be arranged with bypass valves allowing them to be used for emergency pump out of the tank to below the water line.

The tank will also be fitted with a direction suction line to the aft (garage) area so a shore based suction tanker can be connected to the system and used to empty the tank when necessary.

A fresh water outlet should be provided near the tank for use when washing down.

The tank breathers from the grey and black tanks will pass through active carbon filters located above the main deck and in a position where they are easy to service and then exhaust high in the mast structure.

All piping for the black water system to be in welded PVC and the whole system to be plumbed to designs approved by the vacuum system manufacturers, clean out points are to be provided in all the drain lines.

Where metallic pipe have to be used they will be of acid proof stainless steel or other suitable material, all according the design of Vetus.

Special attention is to be paid to sound proofing the vacuum lines and they will all be continuously wrapped with insulation. Level runs of drainage pipes will be avoided.

Capacities: - Grey water – abt. 3500 ltr.
 - Black water – abt. 2500 ltr.

DOMESTIC WATERS

Fresh water will be produced by 2 inverted osmosis desalinations type Hem, 30/40 series .

Water treatment in accordance with MCA rules.

Reverse osmosis unit to be of the automated back flush type and be fitted with simple connections for the introduction of preserving fluids.

The water will be stored into 2 tanks placed inside the stern double bottom.

The real capacity will be abt. 2 x 7.300 ltrs.

The double bottom will have a final vent on the main deck, made of stainless steel.

Fresh water taps in bilge compartments, engine room, garage and all exterior decks forward and aft.

All outlets to be fitted with quick connects.

A water silver sterilizer ionisation system will be part of the complete system .

The tank filling from the quay will have suitable filters and softener built in and be effected through a proper filling point placed abaft.

The double bottom will have a manhole for cleaning.

A capacity level panel reading will be placed inside the engine room or inside the pilot house.

A sounding line can be used in case of instruments dis-function. The inside of the tank will be treated with a food grade corrosion protection system.

The fresh water pipelines will be made of PVC. For the pressure distribution there will be placed 2 G&R type auto priming pumps inside the engine room .

Each user will have his own bronze interception valve.

There will be installed 2 boilers, each abt. 100 ltr. (or smaller to continuous feed), with thermoelectric heating; the water pipelines will be duly isolated with proper material, where necessary.

A third boiler of about 150 ltr, positioned in the bilge forward will provide hot water to the crew and galley area with a cross over system from the main hot supply, for use in case of failure.

All boilers will be fitted with shut of valves, easily replaceable heater elements and twin easily replaceable anodes, they will have individual thermostats and temperature gauges.

AIR CONDITIONING SYSTEM

The air conditioning system, studied and designed by Vector, for the cabins will be composed of refrigerant water conditioners.

The system will guarantee optimum performance throughout the vessel by using type: Marine Air MCW. It will be composed of about 3/4 compressors of 5Cv each.

A complex insulated pipelines system will connect the compressors to the above conditioners.

The internal refrigerant gas cycle can be inverted to obtain the winter heating.

The Motor Yacht will also be provided with a fan-coil inside the laundry (fore peak).

For the AC unit an emergency pump will be installed.

Provision will be made for external air to be drawn in through (two or more) air handlers, this air will be treated and conditioned then distributed to the cabins and accommodation giving at least six air changes per hour.

These air handlers to be fitted with temperature control by means of automated valves to maintain treated air temperature.

At least three main compressors with separate heat exchangers to be used.

Twin sea water circulating pumps, with sufficient capacity to run the whole system from one pump.

All compressors to be fitted on drip trays and all piping to be insulated and lagged.

The individual cabin fan coils will be fitted with drip tray with slosh treatment and will be fully lagged with insulation, drains for condensation will run to collector tanks and then to the vacuum system, each fan coil will be fitted with an easily changeable air filter, all fan coils will be totally cleaned of all build debris before delivery and each drain will be tested for free and clear flow.

System to have heating on circulating water.

The system will be studied to reach at least the following performance

Summer Outside 40° C 90% humidity, Inside 22°C 75%.

Winter Outside 0°C, inside 20°C.

FOOD REFRIGERATION

In the galley there will be placed two fridges with a total capacity of about 0,10 m³ and two freezer of a total capacity of about 0,10 m³, both according sea going quality and commercial specification, type Miele or equal, if needed purpose built.

Refrigerators should not be of the household type but be operated from compressors in the engine room or other suitable location and cooling should be by salt water heat exchanger or glycol tank.

Twin compressors to be fitted with temperature controls external to the refrigerator units, alarms and automated defrosting, drainage from defrosting to go to the waste water system.

One built in cold store and one built in freezer store with alarms fitted in main galley.

Maximum size possible for Tank deck laundry space

EXHAUST GAS SYSTEM

Directly on the engines there will be placed axial and radial high flexibility expansion joints made of stainless steel, and other joints will be placed along the line to face the pipelines expansions.

The silencers will be Stopson type, or equal.

The burnt gasses will be refrigerated with water sea directly aspirated from the main seawater pipe by the propulsion engines and Diesel-generators.

The blow off tubes, flanges, bolts, silencers and collars will be made of steel.

The effluent line will be insulated with proper heat-proof material (porcelain fiber, or equal) and covered with proper covering plating.

Main engine exhausts to be underwater with efficiently designed exits to keep back pressure below manufacturers limits, by pass 'slow running' exhausts to be fitted and the system to be equipped with automated change over valves to shut the by pass.

All exhaust piping to be support from the engine beds or main stringers not from the deck heads. Generator exhaust to be entirely separate and fitted with silencers and gas water separators exhaust gases to exit above the water line and coolant to exit below.

One generator to exhaust to starboard and the other to port.

Engine manufacturer to approve exhaust installations and eventually exhaust back pressures, back pressures at sea trials to be at least 20% below maximum allowed.

Exhaust pipes to be made from acid proof stainless steel and welded TIG and tested.

SEA WATER CIRCULATION

1) Main engines and Generators sets cooling system.

Inside the engine room there will be 2 sea chests with sea outlets, hull valves, cross over etc. to give cooling water to the following:

- 1- main engine
- 2- generators
- 3- fire-fighting & deck washing
- 4- air conditioning system
- 5- desalinizers

The outboard effluent water will have hull valve.

There will be only two seawater inlets.

The system will be dimensioned for the vessel to run all equipment off just one inlet with the engines at 50% power in tropical sea temperatures.

Emergency engine room bilge water pick ups will be provided off each suction.

2) Bilge and fire fighting

The system will be in accordance with the Classification Register and will be composed of 2 electric pumps type G&R ACM/BT, one of them for the bilge system, the other one for fire-fighting system, and a manual pump for bilge service.

The same electric pumps will be able, through valves, to alternate themselves in the 2 services.

All the pumps will be connected to central and aspiration manifold, provided with interception valves for the various bilge cockpits.

All the pumps will have bronze body and stainless steel AISI 316 spindle valve.

The valves and the locks will be made of bronze with brass interior.

A separate emergency fire pump will be installed with its own sea water pick up and powered by an air cooler diesel engine with its own fuel tank, all to meet MCA requirements.

All seawater piping and fire lines to be in copra nickel

Bilge piping material to meet Classification and MCA requirements

FIRE PROTECTION SYSTEM

The equipment of the fire-fighting system will be designed in accordance with the Classification Registry rules. Low fog type in all areas

Temperature ramp and smoke detection to be fitted through vessel.

A dedicated central alarm monitor to be fitted in the pilothouse.

Seawater fixed system

There will be foreseen 3 fire-proof hydrants UNI 45, with 20 m fire hoses, equipped with variable jet fire hydrants, one inside the engine room, one abaft and another one forward the upper deck.

The piping's will be made of galvanised steel, while the lock valves will be made of bronze.

"FM 200" fixed fire-fighting system

It will protect the engine room. The cylinders will be placed inside the engine room.

In case of intervention all the power supplies, the fans and extractors, connected with the flame arrester shutters, the eventual fuel transfer pump and the quick stopping valves of the service tanks will be stopped or closed.

Portable fire-fighting system (or equal)

The "FM 200" and powder extinguishers will be placed according to the "Fire-proof Plan" according the Classification Rules and to meet MCA.

A smoke detectors system will continuously motorize all the areas, while a double "fire/flame detectors" system will check the engine room.

The general situation on board will be visible on a proper synoptic frame placed inside the Pilot House.

Lockers containing portable extinguishers will be marked externally.

Extinguishers will be marked in the English language as to their contents, use and suitability for type of fire.

A fire plan will be permanently mounted in the crew mess.

ENGINE VENTILATION/EXHAUSTING SYSTEM

There will be supplied 2 axial fans of about 10.000 m³/h each.

The hot air of the area will be aspirated by 2 ellipsoidal exhauster's, and conveyed into insulated proper pipeline.

All fans will be fitted with silencers as necessary.

DEAD AIR EXTRACTION SYSTEM

All the bathrooms will be equipped with an independent dead air extraction system.

The galley will have a "MIELE" hood with independent ducts.

Galley extractor to be fitted with changeable active carbon filters, exhaust duct dampers at each deck penetration and a grease trap.

ANTI CORROSION PROTECTION SYSTEM

The protection system will consist of a marine type Impressed Current System, according to the suppliers recommendations in collaboration with the Technical Department on the basis of the studying of the hull galvanic currents.

ENGINE PIPELINES INSULATION SYSTEM

The system will be conceived according to a particular study effected on the thermic-acoustic insulation of the yacht, and particularly on the engine room and on the pipelines connected with it.

The exhaust gas pipings and those of the relative silencers, will be covered with a high thermic resistance covering, with about 80 mm thickness in the more exposed areas, to a minimum of 50 mm.

The covering will be protected with a metallic sheet covering.

In connection with the flanges and of the expansion joints there will be placed proper finishing coverings, easy to move.

The hot water pipelines will be insulated with "Armaflex", or equal, where necessary.

The ventilation pipelines will be insulated with acoustic-absorbent material inside and outside where necessary.

The engine room will be thermic-acoustically insulated through bicomponent dampener material SOKIMA V608 , or equal, and relative laying of zinc sheets.

Afterwards there will be laid rock wool with lead plates and glass wool panels type "Navy board", or equal, according to the designers calculations.

Insulation plan and finishing materials to be presented, all panels to be easily dis-mountable for inspection.

VARIOUS ENGINE ROOM EQUIPMENT

1) Workshop

Inside the garage there will be installed a small work counter provided with chuck, grinding wheel and tools on Shipyard standard.

Power supplies of 220, 380 and 24 volt will be provided at the work bench.

2) Floor plates

They will be made of non skid aluminium tear plates, 6 mm thick, leant on a steel framework.

An easy access to the valves will be granted, as well as to the accessories and machinery.

For the personnel safety all the rotary machinery will be provided with the proper defences.

Edges of sole plates to be raised, sole plates to be anodised or painted, consideration will be given to fitting suitable non metallic plates.

All sole plates to be fastened by screws and to be easily removable, sole plates to be numbered on the reverse and plan of locations to be provided.

3) Ramps

The access ramps to the engine room will be made of aluminium, with sliding-proof steps and eventual steel banisters.

TESTS AND ELEMENTS IDENTIFICATION

Double bottoms and pipelines will be tested once laid through a scrupulous pressing.
All the equipments on board and the elements themselves will be identified through plates and standard colours code according to rules.

ELECTRICAL INSTALLATION

GENERAL PROJECT PHILOSOPHY

The electrical system, from the generators to the sub-boards, will be in accordance with B.V/Lloyds Rules. The vessel will be provided with a general control and monitoring system type MARBLE MS 3080, or similar operating with touch screens.

This system will have flat screens added to give complete navigation and on board monitoring package. From all helm stations and captains cabin and may be interfaced with entertainment system.

GENERATORS

Two diesel-generators type BETA MARINES will be installed inside the engine room and will have the following features:

Comb. Engine:	M 6108 T2
Number of cylinders:	6
Cycle:	4 stroke i.d. diesel
Aspiration:	turbo
Electrical engine:	50 Hz
Power:	130 kw
High energy:	Trip-Phase 380 / 220 V
Start:	12V batteries

The engines and the generators will be fixed on their own bases through elastic supports; the entire apparatus will be fixed on structural hull basements.

The gas exhausting system will be composed of 2 silencers type and of 2 gas/water separators.

The generators will be fitted in the manufacturers standard sound shields and there will be sufficient space all around for any maintenance work on the machines.

Each generator will be provided with automatic stop for low oil pressure, over temperature and over speed.

Each generator will have external to its sound shield a full instrument panel showing RPM, engine hours, coolant temperature and oil pressure these panels will also have start and stop controls.

Generators will also have cooling, oil coolers, electronic speed regulators and full remote operation from control room and/or pilothouse.

The generators will be provided with an automatic parallel system.

MAIN INSTALLATION

The electrical system and all wiring and fittings will be to classification society rules and to best marine standards.

Builder's are to guarantee interference free operation of all electronic apparatus even if of owners supply. The electrical system will be a 400 / 230 Volts system, 3 phase 50 Hz, with 220 volts between phase and neutral.

The electrical system will be supplied with:

One generator 400 Volts, 3 phase 50 Hz 130kw continuous rating.

One generator 400 Volts, 3 phase 50 Hz 130kw continuous rating.

One shore supply 400 Volts, 3 phase 50 Hz, 40 kVA.

One 50kw night generator

There will be a 24 Volts DC net as well, comprised of service battery of 24volts 620ah, emergency battery of 24 volts 480ah radio battery 24 volt 200 ah, two engine start batteries of 24volt 230 Ah each with parallel, generator start batteries 24 volt 120 Ah.

All batteries to be of the lead acid type, except radio battery which will be gel.

The service battery set will be charged by a battery charger, made Victron (or similar), 230 / 24 Volts 100 Ampères each. Each of the other batteries will have its dedicated charger.

The generators, shore supply and consumers will be distributed, protected and switched in the next switch boxes :

Main switchboard in the engine room, 400 / 230 Volts.

Distribution panel in the wheelhouse, 400 / 230 Volts.

Distribution panel on the main deck, 400 / 230 Volts.

Distribution panel on the lower deck, 400 / 230 Volts.

Distribution panel in the engine room, 24 Volts D.C.

Distribution panel in the wheelhouse, 24 Volts D.C.

Navigation panel in the wheelhouse, 24 Volts D.C.

All switchboards will be of standard type, colour RAL 7032.

All switchboards will be provided with name plates, colour white, with black engagement.

All main switchboards will be located in the Control Room .

MAIN SWITCHBOARD

The main switchboard will be installed in the engine room, 400 / 230 Volts, 3 phase 50 Hz, dead front type, made from sheet steel, colour standard RAL 7032, industrial type, with separate sections for the different generators and shore supply.

One generator or the shore supply can supply the complete system.

Switching of the electrical system is as follow:

Manual: With selector push buttons on the main switchboard and in the wheelhouse the following situations can be chosen:

- supply from generator 1.
- supply from generator 2
- supply from night generator.
- supply from shore connection.

Each generator section consists motor driven generator breakers, thermal and magnetic protection and reversed power protection, current transformers, push buttons, signal lights and analogous Volt-, Ampère-, frequency- and kilowatts meters.

The system will be supplied with automatic parallel Lahore power generators parallel generator to generator

The shore supply section consists a shore line breaker, phase sequence control relais, current transformers, push buttons, signal lights and analogous Volt-, Ampère- and frequency meters.

Measurement engine room:

- 1 Voltmeter for each generator and shore line
- 1 Ampere meter for each generator and shore line
- 1 Frequency meter for each generator and shore line
- 1 kW meter for each generator

In the main switchboard, there will be the next outgoing supplies 400 / 230 Volts, protected with automatic breakers:

Fuel transfer pump	1,5 kW
Lube oil pump 1, head engine 1.	7,5 kW
Lube oil pump 2, head engine 1.	7,5 kW
Sewage tank pump	3,0 kW
Fire/deck wash pump	4,0 kW
Bilge pump 1.	2,5 kW
Fresh water cooling pump 1	4,0 kW
Fresh water cooling pump 2	4,0 kW
Sea water cooling pump 1.	4,0 kW
Sea water cooling pump 2.	4,0 kW
Engine room exhaust fan 1.	3,0 kW
Engine room exhaust fan 2.	3,0 kW
Dirty Oil pump.	1,5 kW
Accommodation fan 1.	1,5 kW
Accommodations fan 2.	1,5 kW
Stabilizer	3,0 kW
Hot water boiler 1.	4,0 kW
Hot water boiler 2.	4,0 kW
Hot water circulation pump	0,15 kW
Airconditioning plant 1.	7,5 kW
Airconditioning plant 2.	7,5 kW
Hydrophore 1	0,37 kW
Hydrophore 2	0,37 kW
Steering gear	4,0 kW
Bilge treatment plant	1,0 kW
Battery charger 100 Ampère 1.	2,4 kW
Hydro pump for passarelle	4,0 kW
Engine room lights / sockets	
Distribution box wheelhouse 400/230 Volts	
Distribution box main deck 400/230 Volts	
Distribution box lower deck 400/230 Volts	
Spare 1.	
Spare 2.	
At least six spares total.	

The starters of the bilge and fire pumps, fans and sewage pump will be in front of the main switchboard in the engine room.

All other starters, delivered by us, will be placed in the engine room, near the equipment.

The pumps (Item 2, 3, 5 – 10 on page 3.) will have also the possibility to start in the wheelhouse.

These starters in the wheelhouse will be delivered.

The separate bilge manifold to have his own power resource. Out side of engine room

DISTRIBUTION PANELS

Distribution panel in the wheelhouse, 400 / 230 Volts.

A 400 / 230 Volts distribution panel will be made and installed in the wheelhouse and will be mounted in one of the consoles.

The following consumers are foreseen:

Corridor light / sockets

Wheelhouse light / sockets

Audio / video equipment

Spare

At least four spares.

Distribution panel on the main deck, 400 / 230 Volts.

A 400 / 230 Volts sheet steel distribution box will be made and installed on the main deck, place to be pointed in consultation with the principal.

Consumers will be foreseen for lighting and sockets in the accommodations on the main deck.

The following consumers will be foreseen for equipment in the galley (delivery of the equipment by the principal) :

Hood	1,5 kW
Socket in the galley 16 Ampère 1.	3,5 kW
Socket in the galley 16 Ampère 2.	3,5 kW
Socket in the galley 16 Ampère 3.	3,5 kW
Galley range	8,0 kW
Oven / grill	2,5 kW
Microwave oven	2,5 kW
Refrigerator 1.	0,5 kW
Refrigerator 2.	0,5 kW
Freezer 1.	0,5 kW
Freezer 2.	0,5 kW
Dish washer	2,5 kW
Fan coil unit	1,0 kW
Trash compactor	1,5 kW
Washing machine	2,5 kW
Dryer	3,0 kW
Spare; at least four spares.	

Distribution panel on the lower deck 400 / 230 Volts.

A 400 / 230 Volts sheet steel distribution box will be made and installed on the lower deck, in the crews and the guests area, place to be pointed in consultation with the principal.
Consumers will be foreseen for lighting and sockets in the crews and the guests cabins.

Distribution panel in the engine room, 24 Volts D.C.

A 24 Volts D.C. panel will be made and installed in the engine room with breakers.

Distribution panel in the wheelhouse, 24 Volts D.C.

A 24 Volts D.C. panel will be made and installed in the wheelhouse, with feeding cables and breakers of:

Searchlight 24 Volts
3 Window wipers
TV + antenna system
Telephone system
General alarm
Intercom system
Fire alarm system
Alarm system MS 2080
Horn
Charger radio battery 24 Volts
Gyro compass 24 Volts
VHF radio s
2 x GPS ColourSatellite navigator plotters 24 Volts
Echo Sounder forward scanning
SSB transmitter 24 Volts
Radar 1 x band
Radar 2 y band
GPS
Autopilot
Bowthruster
Rudderindicator
Spare ; at least six spares

Control and switching of the searchlight, window wipers, horn, floodlights, deck lights, intercom, alarm system and fire alarm system will be in the wheelhouse.

NAVIGATION PANEL

A 24 Volts D.C. navigation panel will be made and installed in the wheelhouse with feeding cables and breakers for:

- Portlight (double)
- Starboard light (double)
- Toplight
- Sternlight 1.
- Sternlight 2.
- Anchorlight

The control of the navigation lights will be in the wheelhouse with a black panel.

Navigation lights will be controlled by LED.

Emergency power supply required for navigation lights.

MAIN ENGINE AND GENERATOR SETS

Starting panels to be mounted by the principal in the wheelhouse and in the engine room.

Cabling and connecting of the starting batteries and delivery of the starting batteries are included, with single pole battery key switches.

Cables of the main engines and generator sets itself up to the connection boxes and the transmitters for gauges and alarms, are to be supplied by supplier.

Drawings of the required cabling between connection boxes on the engines and generator sets and the starting boxes in the wheelhouse and the engine room, will be supplied.

2 battery chargers 230 / 24 Volts 50 Amperes to charge- and the starting batteries will be delivered.

For the two generator sets 2 charger 12 Volts 10 Amperes to charge the starting batteries will be delivered.

SHORE CONNECTION & CONVERTER

The shore connection 400 Volts will be equipped with one shore line 40 mtrs. with a 3 phase plug 400 Volts 100 Amperes.

The shore line will plugged in one shore connection socket.

An Atlas or similar shore power converter size sufficient for vessel of this calibre will be provided.

HYDRAULIC SYSTEM

Two electrical driven hydro pumps will serve the hydraulic system.

Feeding cables and cables for level switches, 24 Volt valves etc. will be installed and connected according to drawings.

The 24 Volts DC control of the hydraulic system of steering and the main engines will be cabled and connected, with control on 4 places, namely:

- engine room
- port wing
- starboard wing
- wheelhouse

The 24 Volts DC control of the bow/stern thruster will be cabled and connected, with control on 3 places, namely:

- port wing
- starboard wing
- wheelhouse

The 24 Volts DC control of the 2 capstans will be cabled and connected.

The control of the capstans will be near to the equipment, with 1 control per capstan.

The 24 Volts DC control of the anchor winch will be cabled and connected.

The control of the anchor winch will be near to the equipment, with 1 control per winch.

The 24 Volts DC control of the passarelle will be cabled and connected.

Cables and items will be delivered by the principal.

Control of the passarelle will be near to the equipment.

AIR CONDITIONING

A feeding cable and a fuse for the air conditioning installation will be delivered.

Cables and switches to the fan coil units will be delivered and installed by the principal.

There will be a separate ventilation system with a separate fan in the galley and a cooker hood as well.

WATER SYSTEMS

WATER PRESSURE SYSTEM

To be delivered:

A feeding cable and starting buttons for two hydrophores 400 Volts.

A feeding cable and starting buttons for two/three hot water boilers 400 Volts with two/three hot water circulation pumps:

TOILET VACUUM PUMP

To be delivered :

A feeding cable for a toilet vacuum system 400 Volts .

Toilet system Evac or similar

FUEL PUMP DAY TANK

To be delivered:

A feeding cable and a starter for a fuel pump for the day tank 24 Volts D.C. with the next possibilities:

Switch with control light (manual) in the engine room

ALARMS SYSTEMS

For the next items, cables will be installed and connected.

ALARM SYSTEM

The engine alarm system type Marble MS 2080 will be delivered.

Sensors with NC switches, monitoring engine alarms, generator set alarms, bilge level alarms, etc., in the engine room with co-monitoring in the wheelhouse and the crew area.

Bilge level switches will be included.

Bilge level alarms will be shown on a black panel in the wheelhouse with, with a picture of the ship on it in white.

Alarms will be shown with LED.

FIRE ALARM SYSTEM

The fire alarm system will be delivered, consisting of:

- 4 ionisation smoke sensors in the wheelhouse
- 15 heat sensors 60 dC in the accommodations
- 1 heat sensor 90 dC in the galley
- fire sirens
- black control panel in the wheelhouse

On each panel, fire sensors will be shown as LED.

GENERAL ALARM SYSTEM

The system is consisting of:

- 1 revolving red light in the engine room
- 10 alarm bells in corridors, decks and quarters
- 1 push button in the wheelhouse

FM 200 ALARM SYSTEM

FM 200 alarm system , complete with contacts, valves etc. to be delivered, included cabled and connected.

TANK GAUGE SYSTEM

The system is integrated in the Marble MS 2080 system and is consisting of:

- 5 sensors fuel tanks
- 3 sensors fresh water tanks

AM / FM ANTENNA SYSTEM

An AM / FM antenna system will be delivered and installed consisting of:

The radio antenna outlets situated in:

- the crews quarters
- the owners cabin
- the guest cabins
- the wheelhouse

The television antenna outlets situated in:

- the guest cabins
- the owners cabin
- the saloon upper deck
- the saloon boat deck
- the crews mess

One antenna amplifier and one antenna, standard type, marine quality

SEWERAGE SYSTEM

The yacht will be supplied with a human treatment system suitable in size for such a vessel.

ENTERTAINMENT SYSTEM

All areas which require TV shall be flat screen

A suitable central TV /films /music library shall be provided

All rooms with surround sound system to be meg yacht quality

Radio in all areas

INTERCOM & TELEPHONE SYSTEMS

An intercom system will be delivered and installed, consisting of:

- 1 main station in the wheelhouse
- 3 waterproof loudspeakers (foredeck, aft deck, flying bridge)
- 1 engine room station with headset
- 1 connection to emergency steering in garage
- 1 connection in control room

An intern telephone system will be delivered and installed, with 15 stations in the accommodations, without external connections.

A telephone board, type Panasonic 8-16, will be delivered and installed for the connection to the telephone line, both the shoreline and GSM.

2 Telephones will be connected, type Panasonic lcd KXT 7533, hooked up for satellite connection and placed in the wheelhouse and in the owners cabin.

CAMERA SYSTEM

A colour camera system will be delivered and installed, able to integrate in bridge systems

- 1 tele camera on the ceiling of the stern cockpit
- 1 tele camera in the engineroom, to have pan and tilt.
- 1 camera in the stern cockpit
- 1 on each side deck.
- 1 on upper deck
- 1 on radar arch

NAVIGATION AND COMMUNICATION ELECTRONICS

Navigation and communication equipment will be foreseen with feeding cables and breakers.
(Distribution panel in the wheelhouse, 24 Volts D.C.)

LIGHTING SYSTEMS

All indicated prices in Euro, in general;

- Spot lights
- Sockets

LIGHTING MAIN DECK

Owners Cabin:

16 ceiling spotlights halogen 20 Watt with 3 switches
7 sockets
2 sockets for bed lights
2 table light
2 emergency lights 24 Volts (blue)

Owners Bathroom:

4 ceiling spotlights halogen 20 Watt with 2 switches
1 socket
2 mirror lights
1 emergency light 24 Volts

Galley:

8 ceiling spotlights halogen 20 Watt with 3 switches
3 sockets
1 kitchen light
1 emergency light 24 Volts

Entrance Port:

4 ceiling spotlights halogen 20 Watt with 2 switches
1 socket
1 emergency light 24 Volts

Entrance/Stairs Starboard:

4 ceiling spotlights halogen 20 Watt with 2 switches
1 socket
1 emergency light 24 Volts

Dining room/Salon:

16 ceiling spotlights halogen 20 Watt with 3 switches
3 sockets
1 emergency light 24 Volts

After deck:

6 ceiling spotlights halogen 20 Watt with 1 switch
1 socket
1 emergency light 24 Volts

Railing- and floor lights:

20 lights halogen 20 Watt switched in the wheelhouse
6 emergency light 24 Volts

Stairs aft Port:

2 fittings with 2 switches
1 emergency light 24 Volts

Store aft Starboard:

2 fittings with 1 switch
1 emergency light 24 Volts

LIGHTNING UPPER DECK**Wheelhouse:**

10 ceiling spotlights halogen 20 Watt with 3 switches
2 emergency lights 24 Volts
1 chart table fitting

Entrance/Stairs Starboard:

4 ceiling spotlights halogen 20 Watt with 2 switches
1 socket
1 emergency light 24 Volts

Salon / lounge:

50 ceiling spotlights halogen 20 Watt with 2 switches
6 sockets
2 emergency light 24 Volts

After deck:

8 ceiling spotlights halogen 20 Watt with 2 switches
2 sockets
2 emergency light 24 Volts

Railing- and floor lights:

20 lights halogen 20 Watt switched in the wheelhouse
6 emergency light 24 Volts

Railing- and floor lights Sundeck:

20 lights halogen 20 Watt switched in the wheelhouse
6 emergency light 24 Volts

LIGHTING LOWER DECK

Laundry:

4 ceiling spotlights halogen 20 Watt with 1 switch
1 socket
1 emergency light 24 Volts

Crew's cabin fore (2x):

4 ceiling spotlights halogen 20 Watt with 1 switch
2 sockets
1 emergency lights 24 Volts
1 table fitting max. 80,-

Crew's bath/toilet room fore (2x):

4 ceiling spotlights halogen 20 Watt with 2 switches
1 socket
1 emergency light 24 Volts
1 mirror light halogen 20 Watt with 1 switch

Captains cabin:

8 ceiling spotlights halogen 20 Watt with 3 switches
2 socket
2 emergency lights 24 Volts
1 table fitting
1 bed reading fitting

Captains Bathroom:

4 ceiling spotlights halogen 20 Watt with 2 switches
1 socket
1 emergency light 24 Volts
1 mirror light halogen 0 Watt with 3 switches

Entrance/Stairs crew fore:

2 ceiling spotlights halogen 20 Watt with 2 switches
1 emergency light 24 Volts

Guest room (2x):

4 ceiling spotlights halogen 20 Watt with 1 switch
2 sockets
1 emergency light 24 Volts
2 bed reading fitting

Guest bathroom (2x):

2 ceiling spotlights halogen type 20 Watt with 1 switch
1 socket
1 emergency light 24 Volts
1 mirror light halogen 20 Watt with 1 switch

Guest douche cabin (2x):

1 ceiling spotlights halogen 20 Watt with 1 switch

Entrance/Stairs guests:

4 ceiling spotlights halogen 20 Watt with 2 switches
1 emergency light 24 Volts
1 socket

VIP Guests cabin (2x):

12 ceiling spotlights halogen 20 Watt with 2 switches
4 sockets
1 emergency light 24 Volts
2 bed reading fittings
1 table fitting

VIP Guests bathroom (2x):

2 ceiling spotlights halogen 20 Watt with 1 switch
1 socket
1 emergency light 24 Volts
1 mirror light halogen 20 Watt with 1 switch

Engine room:

12 FL fittings 2x18 watt 230 Volts, switched with 2 switches
4 sockets
4 emergency lights 24 Volts
4 bull eyes under the floor 230 volts, switched with 1 switch

Boat store:

8 FL fittings 2x18 watt 230 Volts, switched with 2 switches
2 sockets
2 emergency lights 24 Volts

Bow thruster room:

2 FL fitting 2x18 watt 230 Volts, switched with 1 switch
1 socket

GENERAL FEATURES

All cables used will be shipping cable of top marine high quality.

All installation materials will be of approved and top marine high quality.

All starters for pumps of our delivery will be delivered with indicator lights in it.

All ornaments in outer spaces will be of stainless steel. Permanently installed lighting fixtures shall be installed in locations as necessary to obtain general and detail illumination for spaces.

EQUIPMENT

WINDLASSES

Two windlasses with warping ends will be provided and will be mounted to the chain link.

The windlasses will be able to weighing the anchors at an average speed, not inferior than the minimum imposed by the Regulations.

The windlasses will be moved by an alternate current engine, 380 V – 50 Hz, with 6 CV power at a double running direction with push-button panel control, with soft start.

The warping end and the hand wheels will be made of stainless steel 'Devils claw' chain dogs to be provided.

HAWSES

Two hawses will be mounted forward, made of stainless steel.

The hull will be protected by two stainless steel plates.

In connection with the hawses, on the teak deck, there will be mounted stainless steel plate, embracing both of them. T

Two steel security fixing systems will be placed on the windlass, one for each chain cable with a proper cable lifter wheel to avoid shakings during navigation, the hawses will have a chains cleaning system powered by the protection system locally controlled.

All the external and visible parts made of stainless steel will be properly polished.

ANCHORS AND CHAIN CABLES

Anchors and chain cables will be dimensioned on the basis of the equipment Number previously approved by the Classification register.

Two anchors type "patent" or similar will be supplied, each of 450 kg approximated, with Register test certificate.

The anchors will be placed inside the bow hawses.

Two naval steel chains will be supplied, with dimensions according the classification register.

Attention will be given to store the anchors by means of one person only.

The anchors will be stored in a closed type pocket with a stainless steel closing plate at the anchor base.

A stern anchore system will be supplied with all equipment required

WARPING CAPSTANS

Aft the deck there will be supplied two warping capstans with an end of approximated 180mm diameter. The end and the passage to deck flange will be mounted over a proper reinforced base-plate with the engine and the devices under the deck.

The warping capstans will be moved by an electric with pedal control.

The warping plates over the deck will be made of stainless steel or on chromium-plated bronze.

MOORING AND WARPING ROPES

There will be supplied four nylon mooring ropes, having a diameter of about 25mm, with a minimum breaking load of 110 kN and 40 kN.

Each rope will have at its end a thumb with chain cable, There will also be supplied nylon towrope of 35mm diameter and 100 meters long, with a breaking load of about 120 kN.

Ropes to have end-eyes.

Leather bound eyes or in any case chosen by the captain.

FENDERS

14 (fourteen) inflating fenders will be supplied, made of plastic material (polyform or similar) with nylon ropes to be placed by the ship's side.

Fender storage to have a stainless steel rack on foredeck if cupboard can not be found.

Fender clips for fitting to rail to be provided, made from stainless steel and padded with sheepskin.

SAFE EQUIPMENTS AND TENDER

The Motor Yacht will be equipped with the following safe devices:

All equipment required For MCA compliance including but not limited too

- a complete set of "not under control" lights
- a complete set of flags as specified in chapter 3.14
- 4 auto inflating lifeboats for eight persons
- 16 life jackets
- 2 ring life-belts with light little buoy
- 2 ring life-belts with line
- portable extinguishers, distributed in each room according to Regulations
- 3 pyrotechnics
- 3 signal rockets
- 2 orange smoke buoys
- fog-horn
- first aid kit
- 1 EPIRB buoy

All equipment to meet MCA requirements.

TRAVELLING BOAT CRANE

Inside the garage there will be installed one -travelling boat crane suitable for lifting and movement and launching tenders.

The garage will be designed to accommodate the owners chosen tender.

The functioning will be electric hydraulic with a power supply of 220/380 V, the manoeuvre operations will be executed through a push-button control.

A suitable davit (non folding type) will be installed for launching of emergency tender, according shipyards standard.

A docking area will be conceived in the swimming platform with a electric hydraulic lift controlled to allow the yachts tender stable access

BITTS AND FAIRLEADS

There will be welded 8 stainless steel bitts, two of them forward and four of them abaft, having an average dimension of 400x125mm.

The two aft fairleads and the two ones abaft, with internal roller, will be made of stainless steel.

The fairleads connected with the central bitts will be made of stainless steel, hull welded.

Other fairleads and bits will be added if required.

Mishap bitts incorporated into fairleads required.

PASSAGEWAY

There will be supplied a fading telescopic passageway, electro-hydraulic made of Stainless steel equipped with a teak runner and handrail with radio controlled system, moreover the passageway will have a running covering made of suitable material.

Also a hydraulic stainless steel med/ladder doc stairs

ROLL-BAR AND LIGHT MAST

In-line with the Yacht external design there will be positioned an aluminium alloy roll-bar, taking the light mast into the centre line.

The light mast will be the support of the radar, navigation lights, antennas, flags and other accessories.

HANDRAILS

Wherever necessary there will be installed stainless steel handrails.

Teak handrails with final copal painting will be positioned on the main deck topside.

Rail to be varnished with Epiphanies varnish (or equal) of at least 8 coast and to be finished to first class yacht standard.

FLAGS

There will be supplied a complete set of the international signals code fabric flags, and they will be placed into a suitable cabinet in the wheelhouse.

There will also be supplied (the National Flag and six courtesy Flags chosen by the Captain).

INTERNAL FITTINGS AND OUTFITS

INSULATION

The forward structural bulkhead of the engine room will be clad with composite insulation and sound absorbent material, composed of high density Rockwood panels, interposed with lead sheets.

All the pipelines running from the engine room to forward will be interrupted with suitable dampers, approved by the Classification Register, to obtain an optimum insulation.

All the areas having sound sources, even if external to the engine room will be properly insulated.

All the steel parts, structural frames and bulkheads, will be covered by high anti condensate, anti sound and thermo insulation (type mat. 163F) expanded foam or equal.

Special attention will be given to insulate galley from the owners suit to give optimum sound proofing.

ACCOMMODATION ARRANGEMENT

Lower deck

- Garage area with sink and counter top
- Engines room
- Two Vip guests double rooms
- Two Vip guests double room bathrooms with Jacuzzi
- Two guest rooms with two single beds
- Two guest bathrooms
- Crew living area at the left
- One captains cabin with bathroom
- Three crew cabins with two beds (on the right and on the left)
- Three crew bathrooms with shower/toilet Storage & Laundry
- Chain locker

Main deck

- Sofa on a structural base
- Saloon with stern access, sofa's and smoking-table, bar with fridge, ice maker and sink, TV isle
- Dining area with furniture and ten persons table
- Foyer
- Service restroom
- Kitchen with accessories and crew quarter
- Owner's office areas in cabin
- Owner's cabin and bathroom with hydro massage basin
- His and Her bathroom with basin and sanitaris

Upper deck

- External entertainment area with smoking table and sofa
- Sky lounge dining area with glass walls
- Cocktail cabinet with ice-maker, fridge and sink
- Sitting-room with entertainment and TV
- Owners office and working area
- Captain's cabin with double bed wardrobe and desk
- Captain's cabin bathroom with shower, toilet and sink
- Bathroom with shower at right
- Wheelhouse with sofa and plot area with two armchairs in the control area

Sun deck

- Mast at gymnasium, gymnasium according design architect
- Sunbathing area with Jacuzzi basin.
- Half round sofa with table under mast position.
- Cocktail cabinet and special designed deck bar with seats around, and with small fridge and ice-maker integrated at fore position.

MATERIALS USED FOR ACCOMODATIONS FUNITURE

General; Genet for accommodations furniture

Handles, buds, taps and fittings;

Marbles & granite;

Bathrooms accessories

Fabrics and curtains

Carpet

Crew area;

Handles, buds, taps and fittings;

Bathrooms accessories

Fabrics and curtains

Carpet

The items like sinks, toilets, cabinets, mirrors, lights, baths, shower bases etc. are included in the interior works.

Owner's cabin

Description/Composition:

- 1 bed 2,10 x 2,00m with frame and base made of walnut Tanganica and fabric side panels as well as the bed head.
- On the wall over the bed head, a mirror with ground-edges.
- On the upper part of the bed 4 linen big drawers. Double season mattress made of anti-allergic material (Latex).
- 2 bedside tables with front door, telephone socket
- 2 appliqués
- Furniture made of walnut Tanganica "Vanity" with folding door, mirror and light
- Small armchair for vanity
- Four shutters walnut Tanganica furniture, on the right side of the cabin

- Walnut Tanganica
- Two seats sofa in synthetic leather or fabric
- Two shutters walnut Tanganica furniture aside the sofa
- Two sliding door cupboard on the right
- Two sliding door cupboard on the left
- Bathroom partition wall with mirrors all length long, on cabin side
- Sliding door bathroom with walnut Tanganica frame and lacquered internal panels

His bathroom

Description/Composition:

- One sinks walnut Tanganica furniture and marble top and central mirror
- Jacuzzi tub between him and her bathroom
- Sanitary fittings (WC, bidet, basin)

Her bathroom

Description/Composition:

- One sinks walnut Tanganica furniture and marble top and central mirror
- Jacuzzi tub between him and her bathroom
- Sanitary fittings (WC, bidet, basin)

Owner's cabin office area

Description/Composition:

- Walnut Tanganica desk with drawers on the sides
- Desk armchair
- One door walnut Tanganica furniture
- Walnut Tanganica bookcase on the furniture sides

Owner's cabin materials

Bulkheads	made of walnut Tanganica with fabric panels
Ceilings	Suede panels
Floors	carpet
Furniture	made of walnut Tanganica, with rolling-proof internal shelves. Where necessary with doors for the inspection of part of equipment
Curtains	double curtain in the port lights curtain rod (rice paper roman) Shades and darkening roman shades, manually controlled)
Doors	made of walnut Tanganica wood
Handles	like Shipyard's sample "push-opening" for cupboards, drawers and wings
Light points	on the ceiling spotlights No-neon in the curtain rods of windows and port lights
Light plates	like Shipyard's sample
Fabrics	Heavy curtain Light curtain Bedcover Bed head Carpet Ceiling/bulkheads

Owner's bathroom materials

Bulkheads	lacquered	
Ceilings	lacquered	
Floors	marbles	
Furniture	made of walnut Tanganica, with 2 rolling-proof internal shelves. Where necessary with doors for inspection of equipments	
Port lights	openable with mosquito-net	
Curtains	double curtain in the port lights curtain rods (rice paper and darkening roman shades)	
Doors	walnut Tanganica frames a lacquered internal panel	
Handles	like Shipyard's sample "push-opening" for cupboards, drawers and wings	
Light plates	like Shipyard's sample	
Marbles	Calacatta for sink tops, splash and basin frame	
Fabrics	Heavy curtain limited to 50,- Euro/m Light curtain limited to 5,- Euro/m	
Taps and fittings	like Shipyard's sample	
Accessories	like Shipyard's sample	
Sanitary	WC jets	
	Bidet	Ideal standard
	Sink	Ideal standard
	Basin	Hydro massage

Vip Guests Cabins

Description/Composition:

- 1 bed 2,10 x 2,00m with frame and base made of walnut Tanganica and fabric side panels as well as the bed head. On the wall over the bed head, a mirror with ground-edges.
- On the upper part of the bed 4 linen big drawers.
- Double season mattress made of anti-allergic material (Latex).
- 2 bedside tables with front door, SONY radio and telephone socket
- 2 appliquéés
- Wardrobe room "WALK-IN", with internal chest of drawers for shoes and linen and 2 dress-hangers
- Vanity walnut Tanganica furniture with leaf wing with mirror and light, on the left side
- Vanity armchair
- Walnut Tanganica TV furniture
- Two wings walnut Tanganica furniture on TV side
- Two wings furniture on the sofa side
- Two seats
- One wing low walnut Tanganica frame furniture near the sofa
- Bathroom door with walnut Tanganica wood

VIP Guests cabin Bathrooms

Description/Composition:

- Two sink walnut Tanganica furniture and marble top central mirror and 2 side lacquered wall unit
- Lacquered basin side with Plexiglas wing to close hydro massage area
- Sanitary (WC, bidet and basin)

VIP Guests cabins materials

Bulkheads	made of walnut Tanganica with fabric panels		
Ceilings	Suede panels		
Floors	carpet		
Furniture	made of walnut Tanganica, with rolling-proof internal shelves.		
Curtains	Where necessary with doors for the inspection of part of equipment double curtain in the port lights curtain rods (rice paper roman shades and darkening roman shades, manually controlled)		
Doors	walnut Tanganica wood		
Handles	like Shipyard's sample "push-opening" for cupboards, drawers and wings		
Light points	on the ceiling spotlights no-neon in the curtain rods of windows and port lights		
Light plates	like Shipyard's sample		
Fabrics	Heavy curtain	€/lm	50
	Light curtain	€/lm	5,-
	Bedcover	€/lm	50,-
	Bed head	€/lm	50,-
	Armchairs	€/lm	50,-
	Carpet	€/lm	50,-
	Ceiling/bulkheads	€/lm	40,-

Vip Guests cabin Bathrooms materials

Bulkheads	lacquered		
Ceilings	lacquered		
Floors	walnut Tanganica wood staves		
Furniture	made of walnut Tanganica, with 2 rolling-proof internal shelves.		
Port lights	Where necessary with doors for inspection of equipments open able with mosquito-net		
Curtains	double curtain in the port lights curtain rods (rice paper and darkening roman shades)		
Doors	walnut Tanganica wood		
Handles	like Shipyard's sample "push-opening" for cupboards, drawers and wings		
Light plates	like Shipyard's sample		
Marbles	Calacatta for sink tops, splash and basin frame		
Fabrics	Heavy curtain	€/lm	50,-
	Light curtain	€/lm	5,-
Taps and fittings	like Shipyard's sample		
Accessories	like Shipyard's sample		
Sanitary	WC jets		
	Bidet	Ideal standard	
	Sink	Ideal standard	
	Basin	Hydro massage	

Guests Cabins

Description/Composition:

- 2 single beds 2,10x1,00m with frame and base made of walnut Tanganica and fabric side panels like the bed head
- 1 walnut Tanganica bedside table between the bed's, with front wing, with radio SONY, telephone tap.
- Cupboard under stairs (for tight cabin only)
- Bathroom door with frame made of walnut Tanganica wood

Guests Cabin Bathrooms

- One sink furniture made of walnut Tanganica and marble top
- Central mirror and two lacquered wall units on the sides
- Shower
- Sanitary (WC, bidet and shower)

Guests Cabins materials

Bulkheads	made of walnut Tanganica with fabric panels		
Ceilings	suede panels		
Floors	carpet		
Furniture	made of walnut Tanganica, with rolling-proof internal shelves. Where necessary with doors for the inspection of part of equipment		
Curtains	double curtain in the port lights curtain rod (rice paper roman shades and darkening roman shades, manually controlled)		
Doors	walnut Tanganica wood		
Handles	like Shipyard's sample "push-opening" for cupboards, drawers and wings		
Light points	on the ceiling spotlights no-neon in the curtain rods of windows and port lights		
Light plates	like Shipyard's sample		
Marbles	Calacatta or similar for sink tops and splash		
Fabrics	Heavy curtain	€/lm	50,-
	Light curtain	€/lm	5,-
	Bedcover	€/lm	50,-
	Bedhead	€/lm	50,-
	Armchairs	€/lm	50,-
	Carpet	€/lm	50,-
	Ceiling/bulkheads	€/lm	40,-

Guests cabin Bathrooms materials

Bulkheads	lacquered
Ceilings	lacquered
Floors	walnut Tanganica staves
Furniture	made of walnut Tanganica, with 2 rolling-proof internal shelves. Where necessary with doors for inspection of equipments
Port lights	open able with mosquito-net
Curtains	double curtain in the port lights curtain rods (rice paper and darkening roman shades)
Doors	walnut Tanganica wood
Handles	like Shipyard's sample "push-opening" for cupboards, drawers and wings
Light plates	like Shipyard's sample

Marbles	Calacatta or similar for sink tops and splash	
Fabrics	Heavy curtain	
	Light curtain	
Taps and fittings	like Shipyard's sample	
Accessories	like Shipyard's sample	
Sanitary	WC jets	
	Bidet	Ideal standard
	Sink	Ideal standard
	Shower plate	stainless steel plate with teak grating

Guests/VIPs Passageway

Bulkheads	made of walnut Tanganica, with fabric panels
Ceilings	suede panels
Floors	carpet
Doors	walnut Tanganica wood
Handles	like Shipyard's sample
Light points	on the ceiling spotlights
Light plates	like Shipyard's sample
Ceilings/bulkh.	limited to

Crew Cabin/Laundry

Description/composition:

- Bunk single beds, with double season made of anti allergic material (Latex)
- 2 bed heads lights
- Little wings cupboard in the elevation between the 2 beds
- One wing bedside table (with walnut Tanganica frame and base and Formica panels)
- Low bed with drawers for linen (with walnut Tanganica frame and base and Formica panels)
- Cupboard in the room forward (storage)
- Little cupboard under stairs (for right cabin only)
- Laundry equipped with sink and ironing board with 2 washing machine and clothes
2 Drier type "Commercial MIELE"

Crew Cabin Bathroom

Description/Composition

- Furniture made of Formica, with walnut Tanganica frames, one sink
- Wall unit with two wings mirror
- Toilet and shower

Crew Cabins/Laundry materials

Bulkheads	made of maple of light cheery wood
Ceilings	made of maple of light cheery wood
Floors	vinyl material
Furniture	made of Formica, with walnut Tanganica frames, with rolling proof shelves. Where necessary with doors for the inspection of equipments
Curtains	cotton darkening curtain
Doors	walnut Tanganica wood
Handles	like Shipyard's sample "push opening" for cupboards, drawers and wings
Light points	on the ceiling spotlights

Light plates	like Shipyard's sample	
Fabrics	heavy curtain	-
	light curtain	
	bedcover	-
	bed head	
	ceilings/bulkheads	

Crew cabins Bathrooms Materials

Bulkheads	made of Formica	
Ceilings	made of Formica	
Floors	teak staves	
Furniture	made of Formica with walnut Tanganica frames, with rolling proof internal shelves. Where necessary with doors for the inspection of the equipments	
Curtains	cotton darkening curtain	
Handles	like Shipyard's sample "push opening" for cupboards, drawers and wings	
Light points	on the ceiling spotlights	
Light plates	like Shipyard's sample	
Fabrics	limited to 40 Euro/m	
Taps and fittings	like Shipyard's sample	
Accessories	like Shipyard's sample	
Sanitary	WC	Jets
	Sink	
	Shower	stainless steel shower plate and teak grating

Kitchen

Description/Composition

- 2 fridge cupboards MIELE (see also 307). Marine refrigeration with sea water cooling required.
- 2 freezer cupboard MIELE. Marine refrigeration with sea water cooling required.
- Counter with wall unit with dish washer MIELE embanked, two sinks top made of granite, marine type
- Three seats angle sofa with peaks with structural peaks
- Table with lengthening flap top
- Embanked furniture, over the stairs room, "
- Counter with wall unit and cooker hood MIELE, embanked, with 6 plates pyroceram cooking top MIELE + 2 pyroceram plates MIELE.
- Cooking tops to be induction heat type.
- Embanked into the counter: compactor Blanco, multifunctional oven MIELE, microwave oven, MIELE

Kitchen Materials

Bulkheads	made of Formica
Ceilings	made of Formica
Floors	tiles made of granit material
Furniture	made of Formica, with walnut Tanganica frames, with 2 rolling proof internal shelves. Where necessary with doors for the inspection of equipments. Accessories made of Plexiglas for crockery fixing
Curtains	limited to 50,- Euro/m
Doors	external side with walnut Tanganica wood Internal side with walnut Tanganica wood

Handles	like Shipyard's sample "push opening" for cupboards, drawers and wings
Light points	on the ceiling spotlights
Light plates	like Shipyard's sample
Fabrics	limited to
Shelf	granite

Service Bathrooms

Description/Composition

- one sink walnut Tanganica furniture with marble top. Central mirror and 2 lacquered wall units on both sides
- sanitary (WC, sink)

Service Bathrooms Materials

Bulkheads	lacquered
Ceilings	made of Formica Floors marbles
Furniture	made of walnut Tanganica, with 2 internal rolling proof shelves. Where necessary with doors for the inspection of the equipment.
Doors	walnut Tanganica frame and lacquered internal panels
Handles	like Shipyard's sample "push opening" for cupboards, drawers and wings, where specified in the drawings
Light points	on the ceiling spotlights
Light plates	like Shipyard's sample
Marbles	like Shipyard's sample
Taps and fittings	like Shipyard's sample
Accessories	like Shipyard's sample
Sanitary	WC Jets Sink

Dining room/Salon

Description/Composition

- 4 wings walnut Tanganica furniture on the left side for the services
- 6 wings walnut Tanganica furniture (aft 25 cm deep) bow side for crystal services and mirror in the upper part on bulkhead
- walnut Tanganica under stairs room 2 wings furniture on the right side of the room
- dinner table for 12 persons with central walnut Tanganica match boarding support, crystal top and 8 chairs with quilted back and sitting; max. 300,- each
- 6 wings partition furniture among dining room and saloon
- fabrics 3 seats sofa with smoking table with walnut Tanganica top
- fabrics 4 seats sofa on the left side with smoking table with crystal top
- fabrics 4 seats sofa on the right with smoking table with crystal top
- walnut Tanganica bar furniture with icemaker, fridge and sink inserted, with marble top
- TV walnut Tanganica furniture, with vanishing equipment and for storage of HIFI saloon/dining room/external aft
- walnut Tanganica writing desk with little arm chair and chest of drawers on the right

Dining room Materials

Bulkheads	made of walnut Tanganica, with fabric panels
Ceilings	lacquered with internal suede panels
Floors	carpet
Furniture	made of walnut Tanganica, with 2 internal rolling roof shelves, where necessary with doors for inspection of equipments
Curtains	double curtain in the port lights curtain rods (rice paper pleated and darkening roman shades)
Doors	walnut Tanganica wood
Handles	like Shipyard's sample "push openings" for cupboards, drawers and wings
Light points	on the ceiling spotlights not-neon in the windows curtain rods
Light plates	like Shipyard's sample
Table	with walnut Tanganica match boarding foot
Fabrics	Heavy curtain Light curtain Chairs Carpet Ceilings/bulkheads

Saloon materials

Bulkheads	made of walnut Tanganica, with fabric panels
Ceilings	lacquered with suede panels
Floors	carpet
Furniture	made of walnut Tanganica, with 2 internal rolling proof shelves. Where necessary with doors for inspection of the equipment
Curtains	double curtain in the curtain rods (rice paper pleated and darkening roman shades)
Doors	walnut Tanganica wood
Handles	like Shipyard's sample "push opening" for cupboards, drawers and wings
Light points	on the ceiling spotlights not neon in the windows curtain rods
Light plates	like Shipyard's sample
Smoking table	with walnut Tanganica match boarding foot and crystal top (the 2 laterals) Walnut Tanganica top (the central one)
Marble	Calacatta (BAR furniture)
Fabrics	Heavy curtain Light curtain Sofa's/armchairs Carpet Ceilings/bulkheads

Sky Lounge / saloon

Description/composition

- walnut Tanganica 3 wings furniture "L" shaped on the right side of the room, shaped for the 4 seats card table
- walnut Tanganica TV furniture, with storage for HIFI SONY, DVD SONY
- 5 seats fabric sofa with smoking table with top end base made of match boarding walnut Tanganica, with one quilted armchair

Sky Lounge/Saloon materials

Bulkheads	made of walnut Tanganica, with fabric panels
Ceilings	lacquered with suede panels
Floors	carpet
Furniture	made of walnut Tanganica, with 2 internal rolling proof shelves. Where necessary with doors for inspection of the equipment and fixing system
Curtains	double curtain in the port light curtain rods (rice paper pleated and darkening roman shades)
Doors	walnut Tanganica wood
Handles	like Shipyard's sample "push opening" for cupboards, drawers and wings
Light points	on the ceiling spotlights not-neon in the windows curtain rods
Light plates	like Shipyard's sample
Smoking table	with walnut Tanganica wood foot and crystal top
Card table	with walnut Tanganica wood foot and top
Fabrics	Heavy curtain Light curtain- Small armchairs Sofa - Carpet Ceilings/bulkheads

Captain's Cabin

Description/Composition

- Single bed 2,10x1,00m ,with double season mattress made of anti allergic material (Latex)
- Bed head made of fabric staves
- 1 luce bed head
- 1 wing bedside table (with walnut Tanganica frame and skirting and Formica panels)
- 1 wing cupboard with valet pole
- Low part of bed with drawers for linen (with frame and skirting made of walnut Tanganica and Formica panels)
- Writing desk with bookcase/chest of drawers on the right and small arm chair in the bulk head astern

Captain's Cabin Bathroom

Description

- Furniture made of Formica with walnut Tanganica frames, with one sink
- Wall unit with 2 wings mirror
- Shower
- Sanitaries

Captain' Cabin materials

Bulkheads	made of walnut Tanganica, with fabric panels
Ceilings	lacquered with Suede panels
Floors	carpet
Furniture	made of walnut Tanganica, with rolling proof shelves. Where necessary with doors for the inspection of equipments
Curtains	cotton darkening curtain
Doors	walnut Tanganica wood

Handles	like Shipyard's sample "push opening" for cupboards, drawers and wings
Light points	on the ceiling spotlights not-neon in the windows curtain rods
Light plates	like Shipyard's sample
Fabrics	Heavy curtain
	Light curtain
	Bedcover -
	Bed head
	Armchairs (imit.leather)
	Carpet
	Ceiling/bulkhead

Captain's Bathroom materials

Bulkheads	lacquered
Ceilings	lacquered
Floors	walnut Tanganica staves
Furniture	made of Formica with walnut Tanganica frames, with rolling proof internal Shelves. Where necessary with wings for the inspection of the equipments.
Curtains	double curtain in the portlights curtain rods (rice paper and darkening roman shades)
Doors	walnut Tanganica wood
Handles	like Shipyard's sample "push opening" for cupboards, drawers and wings (where specified in the drawings)
Light points	on the ceiling spotlights not-neon in the window curtain rods
Light plates	like Shipyard's sample
Marbles	Calacatta or similar for sink tops and splash
Fabrics	Heavy curtain -
	Light curtain
Taps and fittings	like Shipyard's sample
Accessories	like Shipyard's sample
Sanitary	WC Jets
	Sink
	Shower stainless steel shower plate and teak grating

Owner's cabin office area

Description/Composition:

- Walnut Tanganica desk with drawers on the sides
- Desk armchair
- One door walnut Tanganica furniture
- Walnut Tanganica bookcase on the furniture sides

Owner's Office Materials

Bulkheads	made of walnut Tanganica, with fabric panels
Ceilings	Suede panels
Floors	Carpet
Furniture	made of walnut Tanganica, with rolling-proof internal shelves. Where necessary with doors for inspection of part of equipments
Curtains	double curtain in the portlights curtain rods (rice paper and darkening roman shades)

Doors	walnut Tanganica wood
Handleslike	Shipyard's sample "push opening" for cupboards, drawers and (where specified drawings)
Light points	on the ceiling spotlights Not neon in the window curtain rods
Light plates	like Shipyard's sample
Fabrics	Heavy curtain Light curtain Carpet Ceiling/bulkheads Stool (synth. leather) Soft-

Wheelhouse

Description/Composition

- 3 seats fabric sofa with drawers in the lower part for the nautical charts
- Secondary electric Boar horizontally embanked into a walnut Tanganica panel behind the sofa with 2 pilot chairs with arms.
- Walnut Tanganica dashboard furniture with top covered with synthetic leather, arranged at store the navigation and communication electronics and the control systems, with arm chair in the middle

Wheelhouse materials

Bulkheads	made of walnut Tanganica, with fabric panels
Ceilings	with walnut Tanganica frames and synthetic leather panels
Floors	teak staves or carpet
Furniture	made of walnut Tanganica with 2 rolling proof shelves. Where necessary with wings for the inspection of the equipments
Doors	Internals walnut Tanganica wood. Where necessary with wings for the inspection of equipments. Externals watertight according to Classification Register with watertight lock external covered with walnut Tanganica panel
Handles	like Shipyard's sample "push opening" for cupboards, drawers and wings
Light points	on the ceiling spotlights not neon in the windows curtain rods
Light plates	like Shipyard's sample
Fabrics	

External furniture materials

Main Deck

Sofa	on structural base made of sky with outfit covering fabric
Light points	on the ceiling fixture spotlights, also on the bulkheads/skirting
Light plates	like Shipyard's sample
Fabrics	

Upper deck

Sofa's/furniture	made of marine plywood duly treated for bio component finishing as well as for the superstructure with sky cushions, where necessary
Smoking table	2 smoking tables diam. 70cm with top and foot made of teak and copal finishing
Light points	on the ceiling light fixture spotlights, also on the bulkheads/skirting

Light plates	like Shipyard's sample
Locks	"push opening" for cupboards, drawers and wings made of atmospheric agents resistant materials
Hinges	made of material resistant to oxidation due to the atmospheric agents exposure
Fabrics	

Sun deck

Sofa's/Furniture/Counter Sofa's

Control Placings	made of marine plywood, duly treated for bio component Painting as well as the superstructure with sky cushions
Sunbathing area	on structural aluminium base with sky cushions
Light points (if mountable)	on the ceiling spotlight fixtures, also on the bulkheads/skirting
Light plates (if mountable)	like Shipyard's sample
Locks	"push opening" for cupboards, drawers and wings Made of atmospheric agents resistant material
Hinges	made of material resistant due to the Atmospheric agents exposure
Hydro massage basin	Jacuzzi with teak covering

KITCHEN EQUIPMENT

The kitchen will be equipped with the following electric household appliances, MIELE or similar:

- 6 cooking plates induction type.
- 2 electric oven with fan hot air re-circulation.
- 1 microwave oven
- 2 fridges (cooled sep.)
- 2 freezers (cooled sep.)
- 1 refuse compacting machine
- 2 dish washer

Moreover in the main saloon, in the upper and sun decks there will be:

- a bar ice maker
- courtesy fridges

The laundry will be equipped as follows (type MIELE):

- 2 washing machines for (commercial type)
- 2 clothes driers (commercial type)

SAFE

There will be mounted 5 safes with keys ; in the Owner's cabin the Captain's cabin Bridge and inside the VIP cabins crew area

FREE SPACES

All the peaks and free spaces used as storage places will be equipped with cupboards and shelves.
All the available spaces will be completely exploited "no empty/no loos

LIGHTING

The internal and external sighting equipment will be designed according to the needs and the on board uses, as per particular plans of the quarters.

ANTI INTRUSION SYSTEM

The motor Yacht will be equipped with an anti intrusion system with at least 6 sensors connected with an electronic system.

To such a system there will be connected a flashing/siren system, placed on the lights mast with independent power supply.

All the accesses to living areas and especially to the main saloon and to the sky lounge will be always monitored trough the above mentioned sensors.

The equipment control will be effected through 4 electronic keyboards placed respectively in the main entrance, in the back entrance, inside the captain's cabin and inside the crew quarter.

Moreover the monitoring will be completed by a TVCC system composed of cameras, one of them being low contour fixed on the ceiling of the stern cockpit, the other one swing with motorized with cyclic selector control.

As completion of the anti intrusion system the Shipyard will supply the Motor Yacht with a camera placed in the stern cockpit and be able to be accessed through the internet.

JOINERY AND FURNISHING

General

The Vessel is provided with accommodation for a total of abt. 12 persons and abt. 9/10 persons crew.
The lay-out is as shown on the G.A. Plan.

INSTRUMENTS NAVIGATION SYSTEM

WHEELHOUSE CONTROL DEVICES

Inside the wheelhouse there will be placed the following instrumentations:

- Telephone board
- Propulsion monitoring standard panel main engines
- Steering angle indicator detector
- Main engines start/stop
- Engine control
- Manoeuvring interphone
- Acoustic signalling control
- Windscreen-wiper control
- Gyrocompass and autopilot
- Stabilizers controls
- Bowthruster/stern control

Wing decks

- Propulsion monitoring standard panel main engines
- Steering angle indicator detector
- Bow-thruster control
- Main engines start/stop
- Engine control
- Manoeuvring interfone
- Acoustic signalling control

COMMUNICATION AND NAVIGATIONS SYSTEM

The Motor yacht will be supplied with the following equipment, of the latest models

- Radar 72 miles x/y all latest features
- Radar 48x/y
- Autopilot
- VHF Sailor
- Station with anemometer, wind indicator, depth recorder and Log
- Gyrocompass
- SSB Sailor
- 2 colour Plotter GPS ECDIS
- Magnetic compass
- SAT COM
- Echo sounder Doppler forward looking

PAINING AND FINISHINGS

The finishing and painting of the yacht, internal and external, in order of intervention, will be as follows:

HULL

- Grinding
- "Epoter-Free" (2 application)
- Delta UC – "Red"
- Antifouling

TOP SIDE

- Grinding
- Delta UC – "Red" (1 application)
- Epoxide filter
- "Epospray"
- Bicomponent primer
- Admiral "UC" (1 application)
- 2 Components finishing "Top cat-Matterhorn White" (AWLGRIP)

INTERNAL HULL AND BILGE

- Brushing
- Ume guard

INTERNAL SUPERSTRUCTURE

- Grinding
- Anti condensate treatment with exclusion of the floor plates

EXTERNAL SUPERSTRUCTURE

- Grinding
- Delta - UC
- Primer Epoxy
- Epo spray
- Bicomponent primer
- Admiral UC (1 application)
- Components finishing "Top-Coat Matterhorn White" (AWLGRIP) Colours etc.
- Like Shipyard's sample / in consultation with the Owners.

The Shipyard is free to choose components which will improve the system.

The vessel will be underwater protected for corrosion by means of an Impressed Current system.

EXCLUSIONS

It is intended that the supplying of each elements, will be effected only once, even if many times mentioned in the preliminary specification.

There will be excluded from the contract the following supplies:

- a. Jet-ski.
- b. Tender.
- c. Furniture different from the General Arrangements and Leather sofas.
- d. Internal sliding doors.
- e. Cutlery, crystals, arts items, etc., and galley and crew quarters equipment.
- f. Bed clothes supplying.
- g. Bath clothes supplying.
- h. External sponge coverings.
- i. Spare parts.
- j. Hydrographies, nautical charts, portolans etc.
- k. Nautical instruments, such as binoculars, squares, compasses, etc.
- l. .
- m. External coverings.
- n. Every fittings or alterations not included in this specification, and requested by the Flag Authority.
- o. Gymnasium fittings.
- p. Diving bottles air compressor and diving fittings.
- q. Mobile phone.