

# SILENT-YACHTS

## TECHNICAL SPECIFICATIONS SILENT 80



# SILENT-YACHTS

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# SILENT-YACHTS

## 1. General Information

The following technical specifications ("Specifications") describe in detail the technical elements of the construction of the Solar Yacht SILENT 80. All components are marine grade and have a CE certificate. SILENT 80 has been designed and is built in accordance with the ISO rules and in compliance with the safety standards according to the 94/25/CE directive.

## 2. Main Technical Characteristics

### 2.1. Dimensions and Capacities

Exterior- / Interior Design	Arch. Marco Casali	TOO-Design
Naval Architecture	Dr. Amedeo Migali	MICAD
Technical Concept / Innovation	Mag. Michael Köhler	SILENT-YACHTS
Length overall	24,30 m	79,8 ft
Length of waterline	24,20 m	79,4 ft
Beam overall	10,92 m	35,8 ft
Draft	1,20 m	3,93 ft
Deck to waterlevel (bow)	2,70 m	8,86 ft
Deck to waterlevel (cockpit)	2,02 m	6,63 ft
Bridgedeck hight	1,20 m	3,93 ft
Hight over all	5,50 m	18,0 ft
Light displacement *)	55 tons	55 tons
Water *)	1.000 L	264 gal
Waste-water *)	4x 500 L	4x 132 gal
Fuel *)	2x 1.500 L	2x 396 gal
Standard motors (electric)	2x 80 kW	
Battery capacity	240 kWh	
CE Certification	A: 12; B: 18; C: 24; D: 40	

\*) Light displacement and performance predictions subject to change due to specification of vessel.

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## 2.2. Engines and Performance

- a) 2 x 80 kW electric brushless pm motors
- b) Cruising speed 8-10 knots, top speed approx. 12 knots
- c) High-efficiency propellers on shafts

## 2.3. Tests before Delivery

Before the delivery the manufacturer will carry out the following test:

- a) Test of electrical system
- b) Test of hydraulic system
- c) Test of propulsion system
- d) Test for maneuvering
- e) Test of speed at different rpm
- f) Test and commissioning of electronics systems
- g) Control and check of the correct installation and operation of all components
- h) All surveys required for CE must be passed successfully

## 3. Construction Characteristics

Light weight glass / foam composite construction, carbon reinforcements, resin infusion for strong and lightweight structure, high quality and osmosis resistant vinyl ester resin. Watertight bulkheads in several sections and collision-compartments for ultimate safety. Reinforced stub keel protecting propeller and rudder. Impact reinforcements at the bow and along the keel and the waterline. Gelcoat color acc. RAL for all glass fiber reinforced plastic parts. Built in accordance with CE regulations. USCG and MCA on request.

### 3.1. Noise and Vibration Insulation

The insulation system has the purpose to ensure maximum comfort on board and to increase the efficiency of heating and cooling systems.

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## Accommodation

Foam sandwich structure of boat acts as thermal and sound insulation. In all cabins and the salon there is an additional thermal insulation between hull and furniture / wall and ceiling covers, all around the hull and superstructure.

## Engine room

All components of the exhaust system (hose, water lock, gas-water-separator, muffler) are supported by visco elastic elements / rubber supports.

All components of the cooling system of AirCon, E-motors, inverters and others are supported by visco elastic elements / rubber supports, in particular all cooling pumps are mounted in a way that they do not create vibrations on the hull.

Sides, ceilings and bulkheads are covered with thermal and / or acoustic insulation.

## 4. External Layout and Standard Fittings

### 4.1. Fly-Bridge

- a) On choice of the customer either
  - a. 1x sunbed 3.100 x 3.150 mm, behind flybridge with foldable backrests, weathertight storage underneath the sunbed (with drainage), lids supported by gas pistons
  - b. 6 additional solar panels a ' 360Wp instead of the sunbed
- b) 1x molded U-shaped sofa with backrests
- c) 1x FRP table and height adjustable manual table pedestal, can be lowered and used as a daybed
- d) 1x storage cabinet; optional fridge and sink with foldable faucet
- e) 1x mast acc. specification of nav. equipment for radar, antennas and lights
- f) 1x flagpole at center
- g) 1x flybridge stairs with s/s base, teak stairs and s/s handrail
- h) All deck hinges with hidden bolts, heavy duty, polished
- i) All hatches lockable, larger ones equipped with gas pistons

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- j) Switches for all consumers on the fly (lights and 2 main switches for nav. instruments, horn)
- k) Helm seat and console for navigational instruments

## 4.2. Main Deck

- a) 2x molded side deck sofas
- b) Lockers all around the deckhouse, each with drainage and gas supported lid - intended to be used for ropes, fenders, life jackets
- c) s/s handrail all around the deck, horizontal pipe min. 40 mm, vertical stanchions min. 30 mm
- d) Fixed windows in laminated, shatterproof glass, bended in one direction, tinted, heat reflecting with a slight mirror effect

### 4.2.1. Fore Deck

- a) 1x moulded U-shaped sofa with backrest and 2 FRP tables with manually adjustable pedestals
- b) 2x sunbed left and right of U-sofa
- c) 2x deck hatch to crew cabin
- d) 1x 24 V 2000 W electrical anchor winch, vertical type for chain and rope with anchor stopper and 320 mm steel bollard, controls both locally and from the steering stations
- e) 2x forepeaks / storage with access hatch, LED light + switch inside and s/s ladder, 1000 mm long s/s bar of 25 mm diameter to fasten fenders and ropes
- f) 1x weathertight deck hatch to anchor winch and chain locker, LED-light in the chain locker
- g) Access to the anchor chain to connect the bridle
- h) Hose pipe (chain guide) and see-saw for anchor
- i) 2x strong padeyes or rings on the inner side of the bowtips for a bridle
- j) 9x 400 mm steel bollards with engraved SILENT-YACHTS logo

### 4.2.2. Aft Deck

- a) 1x molded sofa on port side, can be upgraded to an optional bar with fridge and sink, storage, electric grill and acrylic worktop
- b) 1x molded U-shaped sofa with backrest on Stb

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- c) 1x FRP table for 10 persons, optionally in teak (extendable) or carbon
- d) 1x stern sofa with flipable backrest
- e) 2x roof support poles
- f) 4x 400 mm AISI 316L bollards with engraved SILENT-YACHTS logo
- g) 2x roller fairleads
- h) 1x sliding salon door / window, s/s, same glass as for the salon and hull windows / portlights, all parts blockable, safety lock for the entrance door
- i) 2x sliding windows (as a wind and rain protection) at the cockpit sides, can slide out or be hidden in a pocket in the FRP of the sidewall of the deckhouse
- j) Molded box with FRP lid in the cockpit ceiling as storage for an (optional) persenning
- k) LED spotlights + mood light in ceiling, both separately dimmable
- l) Switches for the cockpit lights
- m) 2x2 weathertight sockets 230 V + 2x USB socket
- n) Molded lateral fiberglass stairway (first 4 steps), all other steps inox + teak top with handrail to fly bridge
- o) 2x molded fiberglass stairs from aft deck to stern platform, hydraulically liftable to access the stern garages
- p) 1x locker for 2x 220 V sockets (shore supply for onboard services and air conditioning) located on the transom
- q) 1x locker for dock water connection tap
- r) 1x hot / cold hand shower on each aft platform
- s) Swimming ladder support installed on platform (removable manual swimming ladder in stainless steel and teak included) + CE emergency ladder
- t) 2x light bollards (for tender only) on stern platform
- u) Dedicated storage for two liferafts for 8 persons each (lockable)

## 4.2.3. Windows and Port Lights

- a) Deck hatches LEWMAR Flush 3G
- b) All glass in hull and superstructure of same appearance, slight mirror effect, heat reflecting
- c) Glass in glass windows, 2 in each cabin
- d) Sliding stern door stainless steel frame, heavy duty, manually sliding from center to outside, 1x retractable window (moving down), 1x fixed window



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## 4.3. Lower Deck

### 4.3.1. Tender Garage

The garage is placed in the port hull, access through a deck hatch and s/s ladder with teak steps.

The tender launch / recovery system will be guaranteed by a system consisting of:

- a) Weathertight deck hatch with s/s stairs and a hydraulic stern hatch with a power pack for both hatches linked to the power-pack of the (optionally retractable) flybridge roof
- b) Electric captive winch to pull the tender in
- c) Sliding rollers and lashing system when the tender is inside the garage
- d) Waterproof lights with switch
- e) 1x 230 VAC socket in waterproof box, suitable to recharge an electric tender
- f) 1x fresh water hand-shower with cold / hot mixer
- g) Radio remote control + switches for opening the stern hatch and the electric windlass

The garage is designed for a tender with a maximum length of 4,50 x 2,10 m e.g. WILLIAMS SPORTS tender 440 (not included). This garage is expressively a wet storage.

### Technical Compartment underneath the tender bay

- a) Access through a watertight hatch in the front part of the tender bay with s/s stairs
- b) Waterproof light with switch
- c) 2 automatic bilge pumps and alarm
- d) Access to the rudder system

### 4.3.2. Storage for Toys | Technical Compartment

The Toy Garage is located in the starboard stern compartment:

- a) Weathertight deck hatch with s/s stairs and a hydraulic stern hatch with power pack for both hatches linked to power pack of (optionally retractable) flybridge roof

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- b) Waterproof lights with switch
- c) 1x 230 VAC socket in waterproof box, suitable for air pump for inflatable fenders or to recharge batteries of an electric outboard motor
- d) 1x fresh water hand-shower with cold/hot mixer
- e) Radio remote control + switches for opening the stern hatch

The garage can optionally be set up to accommodate diving bottles, bicycles, water toys, jetskis or optionally an amphibious car. This storage is expressly a wet storage.

Technical Compartment underneath the compartment for water toys:

- a) Access through a watertight hatch in the toy-compartment
- b) Short s/s stair from the stern compartment down to the technical compartment
- c) Waterproof light with switch
- d) 2x automatic bilge pumps and alarm
- e) Access to the rudder system and div. technical components

### **4.3.3. Storage Under the Cockpit**

Access through 3 flaps in the transom behind the cockpit and 2 large hatches in the cockpit floor. This is expressly a wet storage and intended to be used for watertoys, SUPs, kajaks.

- a) 4x LED lamps + switch
- b) 10x padeyes to fix the stored items
- c) Drainage holes in the bottom

## **5. Interior Decoration and Fittings**

### **5.1. Main Deck**

#### **5.1.1. Salon | Dining | Galley**

Furniture with drawers and doors according to GA and drawings:

- a) 1x dining table for 10 persons
- b) 1x U-shaped dining sofa

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- c) 1x C-shaped lounge sofa with table in the stern part of the salon
- d) Galley build with characteristic as below:
  - Door finishing in wood or lacquered
  - Acrylic solid worktop
  - All galley appliances MIELE, BOSCH, SIEMENS or similar
  - 1x 80 cm induction cooktop
  - 1x dishwasher
  - 1x 60 cm oven
  - 2x HANS GROHE or KOHLER tap or similar
  - 1x stone sink Blanco or similar
  - 1x Fridge-freezer side by side SAMSUNG (WLH) 900 x 750 x 1780 mm, 550-600 L, A+, chilled water, ice maker
- e) Side exit on Stb behind the helm station, weathertight door
- f) Built-in stairs with handrail descending into the Crew cabin area (see General Arrangement for reference)
- g) Built-in stairs with handrail descending into the Guest / VIP and Master cabin area (see General Arrangement for reference)
- h) LED ceiling spotlights and LED stripes – 6x dimmable circuits
- i) Light switches and 10x VIMAR power sockets + 4x USB sockets
- j) Ceiling panels in wood covered in synthetic leather
- k) Wooden floor or carpet flooring

## 5.1.2. Pilot Station

- a) 1x ergonomic synthetic leather or fabric helm bench, min. 1300 mm wide, foldable armrests, foldable front part to lean on while standing, e.g. BESENZONI
- b) Control dashboard and central panels in wood or carbon including:
  - Steering wheel
  - 1x twin engine control throttles
  - 1x motor and battery display
  - Thruster, navigation lights, winch, 4 wipers and horn controls
  - Alarm panels
- c) Ceiling LED spotlights type A
- d) Ceiling panels in wood covered in synthetic leather
- e) 2x VIMAR power sockets and panels light switches, 2x USB

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## 5.2. Lower Deck

### 5.2.1. Master Cabin

- a) Access from salon/dining area via internal stairway
- b) 1x double bed with 4 base drawers and upholstered headboard, with high quality mattress (205 x 180 cm), "FROLI" aeration system
- c) Furniture with drawers and doors (see General Arrangement for reference)
- d) 1x office/vanity desk with chair
- e) Walk in wardrobe with sliding door with 3x full-height closets
- f) 1x built-in sofa with cushions
- g) Ceiling panels in wood covered in synthetic leather
- h) Valances with folding curtains or OCEANAIR "Day and Night" blinds and shades
- i) 2x reading lights, one on each side of the bed
- j) LED ceiling spotlights (dimmable), indirect mood lights on the ceiling and under cabinets and bed, 2 dimmable circuits
- k) VIMAR power sockets (6x) and panels light switches (4x), 4x USB sockets
- l) Laminated wood floor, optional carpet

### 5.2.2. Master Bathroom

- a) Furniture with acrylic solid top
- b) 1x white porcelain or bamboo wash-basin
- c) 1x WC, light and air extraction with switches inside the WC-room
- d) 1x shower cabin separated from the bathroom, min. height inside 210 cm
- e) Glass door, inox hinges, walls in white FRP, tiles or artificial stone, non-skid flooring in shower and LED spotlights
- f) 1x porthole curtain suitable for bathroom
- g) LED ceiling spotlights
- h) 2x VIMAR power sockets and panels light switches
- i) Mirror and mirror light
- j) Taps:
  - 1x shower mixer tap
  - 1x adjustable height handheld shower head and rain shower (300 x 300 mm) inserted into the ceiling
  - 1x wash basin mixer

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- k) Bathroom accessories:
- 1x shower soap basket
  - 3x soap dispensers
  - 2x towel rails, 1x small electric towel dryer
  - 1x toilet brush holder
  - 1x bathrobe hooks
  - 1x toilet paper holder
  - 1x glass holder for 2 glasses

## **5.2.3. 2x VIP Cabin (for each cabin)**

- a) Access from salon / dining area via internal stairway
- b) Double bed or 2x single beds with 4 base drawers and upholstered headboards, each with mattress (205 x 90 cm)
- c) Furniture in wood with drawers and doors (see General Arrangement for reference)
- d) Ceiling panels in wood covered in synthetic leather
- e) Valances with folding curtains or OCEANAIR "Day and Night" blinds and shades
- f) 2x reading lights, one on each side of the bed
- g) LED ceiling spotlights (dimmable), indirect mood lights on the ceiling and under cabinets and bed
- h) VIMAR power sockets (4x) and panels light switches (6x), 4x USB sockets
- i) Laminated wood floor, optional carpet

## **5.2.4. VIP Bathroom (for each cabin)**

- a) Furniture with acrylic solid top
- b) 1x white porcelain or bamboo wash-basin
- c) 1x WC, air extraction
- d) 1x shower cabin, min. headroom 210 cm, with full width glass wall and glass door with s/s hinges and lock, non-skid flooring in shower and LED spotlights
- e) 1x porthole curtain suitable for bathroom
- f) LED ceiling spotlights
- g) 2x VIMAR power sockets and panels light switches
- h) Mirror and mirror light
- i) Taps:
  - 1x shower mixer tap

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- 1x adjustable height handheld shower head and rain shower (30 x 30 cm) inserted into the ceiling
- 1x wash basin mixer
- j) Bathroom accessories:
  - 1x shower soap basket
  - 3x soap dispensers
  - 2x towel rails, 1x small electric towel dryer
  - 1x toilet brush holder
  - 2x bathrobe hooks
  - 1x toilet paper holder
  - 1x glass holder for 2 glasses

## 5.2.5. Day Head (if applicable)

- a) Furniture with acrylic solid top
- b) 1x white porcelain or bamboo wash-basin
- c) 1x WC
- d) 1x porthole curtain
- e) LED ceiling spotlights
- f) Mirror
- g) Taps:
  - 1x wash basin mixer
  - 1x soap dispensers
  - 1x toilet brush holder
  - 1x towel rail, 2 towel hooks
  - 1x toilet paper holder

## 5.3. Crew Area

Entrance via stairs from the salon and via a (removeable) s/s ladder with teak steps from the front deck.

### 5.3.1. Crew Cabin

- a) 1x bed with mattress (200 x 140 cm), 4 drawers, slats underneath the mattress, can be lifted (hinges and gas pistons) for access to the storage under the bed
- b) 1x pullman bed (200 x 90 cm)
- c) 1x hanging locker
- d) LED ceiling spotlights, 2x reading light above the bed

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- e) TV-set 30"
- f) Ceiling panels in wood covered in synthetic leather
- g) 2x VIMAR power sockets and panels light switches, 2x USB sockets
- h) 1x hatch with mosquito net and blind (OCEANAIR "Skyscreen Roller Recessed")

## 5.3.2. Crew Utility Room

- a) Furniture with drawers and doors (see General Arrangement for reference)
- b) Dedicated space for washing machine and separate dryer
- c) Dedicated space for optional fridge / freezer
- d) L-shaped sofa and dining table
- e) 6x VIMAR power sockets and panels light switches
- f) 1x hatch with mosquito net and blind (OCEANAIR "Skyscreen Roller Recessed")

## 5.3.3. Crew Bathroom

- a) Separated facilities with:
  - 1x sink
  - 1x WC
  - 1x adjustable height shower head
- b) Bathroom accessories:
  - 1x soap dispenser
  - 2x towel rails
  - 1x glass holder
  - 1x toilet brush holder
  - 3x bathrobe hooks
  - 1x toilet paper holder

## 5.4. Airconditioning System

Chiller unit with 100.000 BTU, chilled water system, inverter technology.  
1 airhandler with control unit in each cabin, two in the salon.

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## 5.5. Systems and Material Specifications

The following technical specifications ("Specifications") describe in detail the elements of the SILENT 80.

- a) Headroom in the cabins, bathrooms and corridors 2,10 m,
- b) Headroom in the crew area 1,95 m, front-cabin bathrooms 1,95 m,
- c) Headroom in the salon / pantry: approx. 2,20 m
- d) Width of door openings (final opening inside of the installed doorframe) min. 600 mm
- e) Large port lights and two glass in glass portholes in all cabins
- f) Deck-hatches in all cabins incl. crew area integrated 'flush deck' with mosquito net and blind (OCEANAIR "Skyscreen Roller Recessed")
- g) Natural aeration and forced aspiration-system in all cabins / bathrooms, slow turning + silent fan
- h) Interior furniture built in lightweight materials, light plywood, balsa or foam core where applicable
- i) All walls lacquered or covered with wood, vinyl leather or alcantara materials
- j) Standard interior with mix of modern veneer with white lacquered surfaces and wooden floors. Decor wall panels will be in vinyl leather optic. Stainless steel / carbon optic / leather applications inside
- k) Laminated wood floor
- l) Hand rails in s/s, covered with leather at stair cases
- m) All cabin- and bathroom doors in light weight material, high quality, soft closure, magnetic fixation
- n) Shadow blinds for all windows (OCEANAIR)
- o) Skyscreen for all deck hatches incl. mosquito net and blind (OCEANAIR)
- p) Shower door handle, Hafele: 988.19.992 (or sim.)
- q) Towel holder, Hafele: 988.14.512 (or sim.)
- r) Soap container, Hafele: 980.60.012 (or sim.)
- s) Tooth brush glass, Hafele: 980.60.022 (or sim.)
- t) Toilet brush, Hafele: 980.60.312 (or sim.)
- u) Toilet paper roller, Hafele: 980.60.302 (or sim.)
- v) Grab rail, Hafele: 980.64.432 for shower (or sim.)



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## **5.5.1. Upholstery, blinds and fabrics**

All the sofas, chairs, armchairs and bed heads can be selected by the customer amongst the standard decor and material samples or similar presented at the shipyard showroom. All leather or artificial leather parts with double stitch at all edges and corners.

- a) Folding curtain's fabric: FOCUS LAB 753 Décor Panama 200cs or similar
- b) External covers in fabrics: ITALVIPLA mod. Tropical fabrics water resistant or similar
- c) Synthetic leather: ITALVIPLA art. Ultraflex Z3 -or similar
- d) Internal fabrics: ACRO coll. Chiara art. 5306 -or similar
- e) Crew quarter fabric: ACRO coll. Chiara art. 5342 -or similar

## **5.5.2. Floors**

The floors are covered with:

- a) Floor carpets: synthetic carpet in all guest areas BESANA mod. 8 silk prestige line or similar
- b) Interior wood: plywood in mahogany or teak with maple strips floor
- c) Exterior synthetic teak: planks 45 mm wide (at least 7 mm thick) - optional

## **5.5.3. Mirrors**

All mirrors provided and installed are in smooth glass as in the General Arrangement.

## **5.5.4. Door Handles**

Door handles can be selected by the customer from FORESTI E SUARDI mod. 260A.CC or similar, and cylindrical locks and hinges.

## **5.5.5. Bathroom Fitting and Accessories**

- a) Taps and shower kit are provided and installed in chrome finishing FORESTI ESUARDI mod. LEMANS art. 4280.C - or similar
- b) Accessories FORESTI E SUARDI mod. CARMEL - or similar

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- c) Sinks are supplied and installed FORESTI E SUARDI mod. FUORI CORNER QUADRO art. L010.BCO - or similar
- d) Top in Acrylic solid surface
- e) The shower floors in non-skid flooring

## **5.5.6. Woods and Laquering**

- a) Woods can be selected by the customer amongst the standard decor and accessories samples at the shipyard showroom
- b) Lacquered surfaces are to be considered in RAL 9010 color with 50-gloss finish

## **5.5.7. Toilet Units**

Toilets PLANUS mod. Artic plus 24V white

## **5.5.8. Electric System AC**

All kitchen appliances MIELE MARINE, SIEMENS, BOSCH or similar.

- a) Oven - t.b.s.
- b) Induction cooktop - t.b.s.
- c) Side by side refrigerator (SAMSUNG or LG) - t.b.s.
- d) Dishwasher - t.b.s.
- e) AC Sockets inside - 4x each cabin, 2x each bathroom, 8x salon, 2x cockpit, 2x fly
- f) AC main distribution box
- g) DC main distribution box
- h) Capacity indicator for all tanks and batteries with LCD screen
- i) Grounding plates 230 V
- j) Shore connection / socket - MARINCO socket / bipolar, single phase, 3 wire, stainless steel, IP 54
- k) Polarity detection for shore power - detection and change

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## 5.5.9. Electric System DC

- a) Navigation light Stb + Port - FORCATO, HELLA or similar
- b) Navigation light steam topleight - FORCATO, HELLA or similar
- c) Navigation light stern - FORCATO, HELLA or similar
- d) Navigation light anchor - FORCATO, HELLA or similar
- e) LED stern light min. 20 W HELLA or similar
- f) Interior Ceiling light: "LED - SEXTANS Q", F&S 5080.C.3200 or similar
- g) Electric light dimmer (circuits) – 14x (cabins 5x, salon 4x, cockpit 2x, deckshouse downlights 1x, flybridge 2x)
- h) Reading and chart lights – 12x units, F&S or similar
- i) LED strip - 28 m total length
- j) Generator-, tender- and technical compartments light LED, HELLA (>IP65) or similar
- k) Exterior ceiling lights at cockpit and fore deck (F&S 6031.I.3200)
- l) Beauty lights at mirrors in each bathroom
- m) Linear drive console flybridge - gas spring activated manually
- n) Windlass vertical
- o) Windlass footswitches (veer an haul)
- p) Anchor remote control radio controlled
- q) 2x switches on fly and inside helm incl. automatic fuse
- r) Light switches, 230 V sockets and USB sockets - VIMAR Units of 2, 3, 4 throughout the boat
- s) 2x grounding plates
- t) Magnetic compass at main helm and at fly helm
- u) Windscreen wipers s/s with water spray set, rubber wiper blades
- v) Generator starter battery – 105 Ah 24 V GEL - Starter Genset
- w) Battery switch
- x) Battery box and installation material
- y) Fuse box
- z) ATO and ANL fuses
- aa) Carlingtech switches at helm or similar
- bb) Fanfare
- cc) Electric valves for blackwater tanks, operated from main panel
- dd) All lights high quality LED by FORRESTI & SUARDI, CANTALUPI - or similar
- ee) Bilge pumps with switch and fuse panel
- ff) Bilge alarms with switch and fuse panel
- gg) Pumps for black tanks with switch and fuse panel
- hh) Tank sensor and alarm panel

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## 5.5.10. Detailed description of the lights

All lights in the same light color of about 3.000 K

Type A SEXTANS BIG S P-LED 3.6W 10/30VDC 3200/4000° K main spot light ceiling

Type B MIRA TT P-LED 1, 2 W 10/30VDC 3200/4000° K shower, mirror and external cieling IP65 spot light

Type C ANDROMEDA G2 LED 1,2W 10/30VDC 3200/4000° K courtesy light IP67

Type D VEGA W P-LED 2W 10/30VDC 3200/4000° K reading light

Type E ELETTRA T LED 0,5W 10/30VDC 3200/4000° K external courtesy light IP67

## 6. Energy Production and Storage

High voltage DC Battery for main storage, MPPT- charge regulators, solar panels, inverters, e-motors, generator.

### 6.1. Solar Power

- a) 64/70 high-efficiency Sunpower X22 solar panels in total - 42 panels on the salon roof, 14 panels on the (optional) flyroof, 8 behind the flybridge, 6 instead of the sunbed. E  
Each 1560 x 1046 mm, 360 Wp
- b) Total 114 m<sup>2</sup> | 1.229" square foot, 25,200 W peak production
- c) MPPT solar charge regulators.

### 6.2. Electric Power Storage

High voltage DC Battery 400 V for main storage with a capacity of about 240 kWh.

Separate Air conditioning as a battery compartment cooling system.

### Battery Management System

Each battery module comes with an integrated battery management system (BMS). This is an intelligent electronic module that measures all cell voltages and temperatures to control balancing on both battery cell

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and module level. The battery modules communicate by a galvanic isolated CAN-Bus with the Master BMS, which collects and monitors the status of all battery modules.

If the measured values from a battery module exceed the limit, the Master will automatically act to protect the connected battery modules. Monitoring and control EM-Display monitors and controls all battery systems. The high-resolution display with integrated touch screen shows all important battery parameters at a glance. The integrated Wi-Fi-module will connect the display to the laptop on board and makes it possible to check the systems remotely by our technicians.

## **6.3. Range Extender**

Generator as range extender 100 kW (VOLVO D3 4 Cylinder/ UQM generator).

In order to reduce the noise, it is fitted with water separator and special silencer blocks.

## **6.4. Service Batteries**

24 V service batteries, Lithium High energy, 16,6 kWh (~ 400 Ah) including BMS.

3 kW charger for service batteries.

Service batteries connected to master control display via CAN-Bus.

## **7. Navigation Control Systems and Electronics**

### **7.1. Wheelhouse**

Steering station control panels including:

- a) Start/stop engine switches
- b) 1x electronic twin engine control handles
- c) 1x display engines and battery
- d) RIVIERA Magnetic compass - or similar
- e) Navigation, position and dashboard light switches
- f) Horn control and windshield wash/wipers controls
- g) Filters alarm
- h) Bilge alarms

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## 7.2. Fly bridge steering station

- a) 1x display engines and battery
- b) Winch and anchor washing controls
- c) Magnetic compass
- d) Horn control
- e) Electronic twin engine controls

## 8. Fresh Water and Sewage System

### 8.1. Fresh Water System

- a) Fresh water tank 1.000 L, structurally integrated in the hull with man-hole
- b) Fresh water tank 50 L, man-hole for potable water
- c) Water pump + filter to supply fridge / 2nd tap at pantry sink / separated from bathrooms and stern shower
- d) Water pressure system - 1x pump (GIANNESCHI or sim. 50 L/min), 1x Tank 5 L inox
- e) 5x electric water heater - 230 V heating: 20 L, for each bathroom
- f) 2x electric water heater - 230 V heating: 10 L, for pantry and stern shower
- g) Shower mixer tap with shower head + rainshower in all bathrooms
- h) 2x transom shower (warm / cold)
- i) Integrated stern shower on tender bay hatch when opened with mixer unit
- j) Taps at bathrooms - all armatures and showers HANS GROHE, KOHLER or similar
- k) Shower drains at bathrooms hidden under acrylic / stone cover
- l) Deck filler for water
- m) Tank ventilation and filters
- n) Maintenance free plastic water hose (Whale or similar)
- o) Hose clamps all high-quality s/s, for pressurized water, fuel, blackwater and under the waterline all clamps double

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## 8.2. Grey and Sewage Water System

- a) 4x ca. 500 L grey water tanks, manhole with aluminum lid, level sensor, all tanks located under the bathrooms
- b) 4x self-priming 24 V GIANNESCHI pump ECO MV 44E for automatic or manual tank discharge
- c) 3-way valve for deck discharge
- d) Deck fitting waste water acc. EN ISO for discharge
- e) Grey water system connecting tank with washbasins, sinks, showers, bidets, dishwasher and washing machine
- f) Shower drain kit
- g) Waste water hoses marine grade, anti-smell type (SEALAND or similar)
- h) Anti-odor filter on tank's vent

## 9. Bilge System

- a) Self-priming electric bilge pump units at hulls (8x)
- b) Bilge alarms next to the bilge pumps
- c) Manual bilge pump at stern cockpit
- d) Skin fittings with ball valves
- e) Control panel (touch screen monitor) at salon helm

## 10. Fire-fighting and Fire Protection Systems

- a) Fixed fire extinguisher: 1x generator and aux. installation, 1x at battery compartment, suitable for net space (SEAFIRE)
- b) Fuel shut-off remote control at helm
- c) Fire extinguishers in each cabin and salon (7x)
- d) Fire detection units in each cabin and salon (6x)
- e) Fire blanket for galley

## 11. Grounding Systems

4-6 Grounding plates for AC and DC systems.

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## 12. Steering System

- a) Rudder shaft stainless steel massive stock
- b) Rudder stock
- c) Lower and upper rudder bearing
- d) Gaiter sealing
- e) Rudder tube
- f) Steering pumps on fly helm and salon helm
- g) Steering pump flange
- h) Venting valve for steering pump
- i) Balance valves with bypass function
- j) Hydraulic rudder cylinders
- k) Steering wheel - stainless steel polished at flybridge
- l) Steering wheel - carbon fiber optic at salon
- m) Steering wheel - additional brand logo in wheel center
- n) Hydraulic tube
- o) Hydraulic tube support sleeve
- p) S/S rudder arm and misc. components
- q) Emergency tiller acc. to CE

## 13. Fuel and Oil Systems

- a) Fuel deck fill station in-molded in superstructure, covered with a lid
- b) Fuel tank s s/s, manhole: ca. 2x 1.500 L with inspection tubes at tank
- c) Splash-stop for fuel
- d) Rising pipes
- e) Ventilation with smell filter
- f) Fuel manifold valve
- g) Diesel pre-filters
- h) Fuel transfer pump with filter
- i) Electronic level gauge at main dashboard and at deck fill station
- j) Fuel hose - marine fuel acc. ISO
- k) Double hose clamps s/s heavy duty



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## 14. Deck Hardware

- a) Fender profile for hull outside and platform - TESSILMARE SPHAERA (60 mm height)
- b) Fender profile end fitting
- c) Anchor bow roller with secure pin
- d) Padeyes for anchor bridle
- e) 12 cleats main deck:
  - s/s, 400 mm customized t.b.s.
- f) Anti-chafing-protection plate s/s at side sill
- g) Retractable cleats at platform (SEASMART)
- h) 6x fender pad eyes at aft platform