

SILENT-YACHTS

TECHNICAL SPECIFICATIONS SILENT 55



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1 General Information

The following technical specifications ("Specifications") describe in detail the technical elements of the construction of the Solar Yacht SILENT 55.

All components are marine grade and have a CE certificate. SILENT 55 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

Concept	Mag. Michael Köhler	SILENT-YACHTS
Yacht design & Engineering	iYacht GmbH Hamburg Germany	
Length overall	16,70 m	54,8 ft
Length of waterline	16,52 m	54,2 ft
Beam overall	8,46 m	27,7 ft
Draft	1,20 m	3,93 ft
Slenderness ratio (Lwl/Bwl)	10,08	
Light displacement *)	19 tons	19 tons
Water *)	500 L	132 gal
Waste-water *)	2x 475 L + 1x 135 L	2x 125 + 1x 36 gal
Fuel *)	2x 300 L	2x 125 + 1x 36 gal
Standard motors (electric)	2x 30 kW	
CE Certification	A: 12; B: 12; C: 16; D: 20	

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

2.2 Engines and Performance

- a) 2 x 30 kW high efficiency motors
- b) Cruising speed 6-7 knots, top speed approx. 11 knots
- c) High-efficiency propellers on turnable saildrives – commercial version
- d) Engine controls and control panels at inside and outside helm

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- e) Access to engine- / technical-compartments via cockpit and / or via stern entrance
- f) Engine-compartments ventilation: natural aeration and forced extraction
- g) Generator-, engine- and technical compartments sound protected
- h) 2x 300 L fuel tank for range extender
- i) Equipment includes:
 - Filtration: pre-filter, water-separator and filter
 - Fuel cut-out remote control
 - Fuel filler, aeration
 - Electric reading gauges on chart table

2.3 Tests before Delivery

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

- a) Preliminary test of electrical system
- b) Preliminary test of hydraulic system
- c) Preliminary 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

- a) Light weight glass sandwich composite construction, carbon reinforced
- b) Resin infusion and vacuum bagging for strong and lightweight structure
- c) High quality and osmosis free vinyl ester resin with high interlaminar shear strength
- d) Sophisticated highly torsion resistant hull and bulkhead structure
- e) Watertight bulkheads, sealed floor-sections and collision-compartments for ultimate safety
- f) Foam sandwich structure of boat acts as thermal and sound insulation
- g) Interior furniture acts as reinforcing light weight structure
- h) Complete boat in gelcoat laminate surface

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4 External Layout and Standard Fittings

4.1 Transoms

- a) Shower (H/C) in starboard transom
- b) Inox handrails
- c) 1x swimming ladder at transom step
- d) L-bench at the salon-wall with cockpit table for 8 persons
- e) All voids are accessible for ropes, fenders, cushions etc.
- f) Stairs to flybridge

4.2 Engine- / Technical Compartments

- a) Access through liftable stairways
- b) Sufficient space for generator and all other technical components
- c) Space for a motorbike, watertoys etc.
- d) Sound-protected, LED-light, 230 V socket
- e) LED-light in each technical compartment

4.3 Foredeck

- a) 2x deck-hatches for access to forward storage-compartments
- b) 1.500 W electric windlass (10 mm chain)
- c) Composite longitudinal compression-beam, comfortable trampolines made of UV-resistant heavy duty mesh
- d) Backrests on the trampoline

4.4 Flybridge

- a) Central helm console for engine controls and navigation equipment
- b) Moulded U-shaped sofa with table
- c) Sun-beds with flippable backrests
- d) Fixed solar-roof (optionally retractable)

4.5 Deck fittings

- a) 10x mooring cleats total (2x stern, 2x mid-ship, 1x bow on each hull)
- b) 2x pad-eyes to attach the lifelines
- c) 630 - 900 mm inox stanchions with inox handrail
- d) Pulpit in stainless steel, optional bow seats with teak

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4.6 Exterior decoration

SILENT-YACHTS logo on sides of coach roof, model name on each hull

4.7 US SPECIFICATIONS

For boats sold in USA only:

- 110 V electrical panels, 110 V sockets

5 Interior Decoration and Fittings

5.1 Layout Versions

- a) **VERSION 3/3:** 1 full-width (>7 m) VIP-cabin in the front, 2 VIP-cabins with en-suite bathrooms in the hulls (= 3 cabins, 3 bathrooms)

Other optional variations:

- b) **VERSION 4/3:** port-side 2 twin- or double-bed cabins sharing 1 bathroom, starboard 1 VIP-cabin with en-suite bathroom, 1 full-width (>7 m) VIP-cabin in the front with en suite bathroom and walk-in-locker (= 4 cabins, 3 bathrooms)
- c) **VERSION 4/4:** port-side 2 double-bed cabins each with en-suite bathroom, starboard 1 VIP-cabin with en-suite bathroom, 1 full-width VIP-cabin in the front with en suite bathroom (= 4 cabins, 4 bathrooms)
- d) **VERSION 5/3:** 4 twin- or double-bed cabins (2 in each hull) sharing 2 bathrooms, 1 full-width (>7 m) VIP-cabin in the front, (= 5 cabins, 3 bathrooms)
- e) **VERSION 6/4:** 2 double-bed cabins with en suite bathrooms in the front, 4 twin- or double-bed cabins (2 in each hull) sharing 2 bathrooms (= 6 cabins, 4 bathrooms)

All bathrooms incl. sink, electric toilet and separate shower.

All cabins either with double bed or two single beds.

Other versions on request.

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5.2 Electricity

- a) Fuses and interrupters for 12, 24 and 48 V DC and 230 V AC (US Version 110 V)
- b) All wiring with tin-coated copper cables of marine grade
- c) All cables labelled and numbered and mounted on rails
- d) All lights high quality LED
- e) Main switchboard for battery level, fuel-, water- and blackwater-levels, navigation lights
- f) Shore-power connection with fuse

5.3 General Interior

- a) Headroom in the cabins, bathrooms and corridors 2,04 m
- b) Headroom in the front-cabin 2,00 m, front-cabin bathrooms / walk-in-closet 2,04 m
- c) Headroom in the salon / kitchen: 2,09 m
- d) Large portlights in all cabins
- e) Natural aeration and forced aspiration-system in all cabins / bathrooms
- f) Interior furniture built in laminated plywood
- g) Thermal insulation for excellent room climate
- h) All walls in laminated plywood, laquered or covered with technical leather
- i) Standard interior with mix of modern with a mix of modern materials and stylings
- j) Hand rails in inox, optionally covered with leather
- k) All cabin- and bathroom doors in light weight material, high quality, soft closure
- l) Door-locks with high quality "anti-rattle" mechanism, all drawers soft closure
- m) Port lights and deck hatches in "flush deck" design and CE approved
- n) All steps with anti skid surface, LED courtesy-lights

5.4 Salon

- a) Vast panoramic salon of $\sim 40 \text{ m}^2$ - headroom: 205 cm
- b) Sliding salon door and sliding window- opens at full salon-width
- c) Sliding window on the Stb side
- d) Sliding door and sliding windows transform the closed salon into an open cockpit-area
- e) Dimmable LED spot lights on the ceiling, LED stripes around the ceiling

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Inside Helms-Position

- a) Helm-position with steering, engine-controls and -displays, compass
- b) Large instrument steering wheel for electronic equipment
- c) 2x 230 V (US 110 V) socket, 2x 12 V sockets
- d) Helms-seat for two persons (~120 cm wide)
- e) 360° view from the helms-position
- f) Vast storage underneath with ~120 cm long drawers

Salon Lounge Area

- a) "L" shaped sofa with comfortable cushions, could serve as bed
- b) Dining table for 8 persons

Pantry

- a) "U" shaped kitchen with acrylic stone worktop
- b) Sink in stainless steel
- c) 230 V (US 110 V) sockets on the worktop
- d) Induction cook-top (4 plates)
- e) Fridge or side-by-side fridge/freezer (depending on version)

5.5 General Cabins

- a) 1 large double bed or 2 single beds with slatted base and comfortably upholstered headboard
- b) Maritime mattresses in PU-foam with varied densities for greater comfort and restful sleep (140 mm thick), anti-mite, anti-fungus, antibacterial, hypoallergenic and comfortably upholstered headboard
- c) Storage under the bed, accessible from the side or from the top
- d) Hanging lockers and lockers with shelves, storage boards (depending on version)
- e) 2x 230 V (US 110 V) sockets, 12 V and USB socket
- f) LED-ceiling-lights and reading lights back side of the bed

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Front VIP-Cabin - Additionally to the above-mentioned features

- a) Full-width cabin > 7 m wide
- b) 1 large double bed 200 x 180 with side access with slatted base
- c) Vast storage area on the bridgedeck alongside the bulkhead
- d) Bathroom on portside with large vanity-table, large shower and 230 V plugs
- e) Walk-in locker on starboard with extensive hanging lockers, desk, large mirror and lockers with shelves

5.6 Bathrooms

- a) En-Suite Bathroom in "Version 3 VIP", "Version 2/2 + 2 VIP" and "Version 4/4"
- b) Sink / basin with mixer tap (H/C)
- c) Locker under / above the sink / basin and other locker for various items
- d) Upper cabinet with mirror
- e) Non-skid flooring
- f) Accessories like towel holder, soap-dispenser, paper-holder
- g) Electric toilet
- h) Separate shower (H/C) in each bathroom
- i) Storage-shelf and seat in shower
- j) 230 V (US 110 V) socket
- k) LED spotlights

Bathroom of Master- and VIP Cabin

Additionally to the above mentioned features:

- a) Generous bathroom
- b) Large "king-size" shower of 180 cm width
- c) Large sink / basin
- d) Additional mirror and lockers

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6 Energy Production and Storage

- a) 30 high-efficiency solar-panels with >10 kWp in total for propulsion and household
- b) MPPT solar charge regulators
- c) Range-Extender 22 kW @ 48 V
- d) Lithium batteries 48 V, 70 kWh
- e) 24 V service batteries with 50 A charger
- f) Charger 80 A for 48 V batteries
- g) Inverter 10 kVA - sufficient for all standard household appliances
- h) Charge-, consumption- and capacity controls for all electric circuits

7 Navigation Control Systems and Electronics

- a) 2x rudder blades with stainless steel rudder shaft (except with turnable saildrives)
- b) Epoxy tube for rudder bearings
- c) Self-aligning upper and lower bearings
- d) Hydraulic steering system (except with turnable saildrives)

8 Fresh Water and Sewage System

- a) All hoses and pipes are marine grade
- b) Fresh water:
 - 500 L fresh water tank (1.000 L as option)
 - Fresh water circuit including pressure pumps
 - Electric boilers for all showers / sinks
 - 1x hand shower on stern platform (H/C)
- c) Waste water:
 - 2x waste water tank with electric MACERATOR pump
- d) Drainage circuit:
 - Self-draining cockpit as per CE standards
 - Automatically activated electric bilge pump & manual pump in every watertight compartment